

SONY



# STEREO TAPECORDER TC-252

OWNER'S INSTRUCTION MANUAL



The SONY Model TC-252 is a four-track stereophonic/monophonic tape recorder for accurate-recording and playback, featuring built-in amplifiers and lid-integrated stereo speakers.

Special features are: vibration-free motor; all-silicon transistor for exceptional low noise and distortion; scrape flutter filter which eliminates undesirable tape modulation distortion; automatic sentinel shut-off and retractable pinch roller. Sound-on-sound facility of the TC-252 permits composite recording from left channel to right channel and vice versa with its selector switch. Sound-with-sound and public address are also featured.

Read the information contained in this manual carefully before operating the recorder and keep this manual handy for future reference.

☆ **The SONY Model TC-252 comes in two types.**

1. For use in SWEDEN, FINLAND, DENMARK, NORWAY and SWITZERLAND

In compliance with the safety rules of SEMKO (Sweden), DEMKO (Denmark), NEMKO (Norway) and SEV (Switzerland), the set is fixed to operate on AC 220V, 50Hz. Therefore, do not attempt to move the Voltage Selector and the Frequency Selector. Please cross out the "Adaptation to the Local Power Line" on page 14. The sets for these areas are equipped with phone-type connectors for microphones and speakers.

2. For use in OTHER COUNTRIES

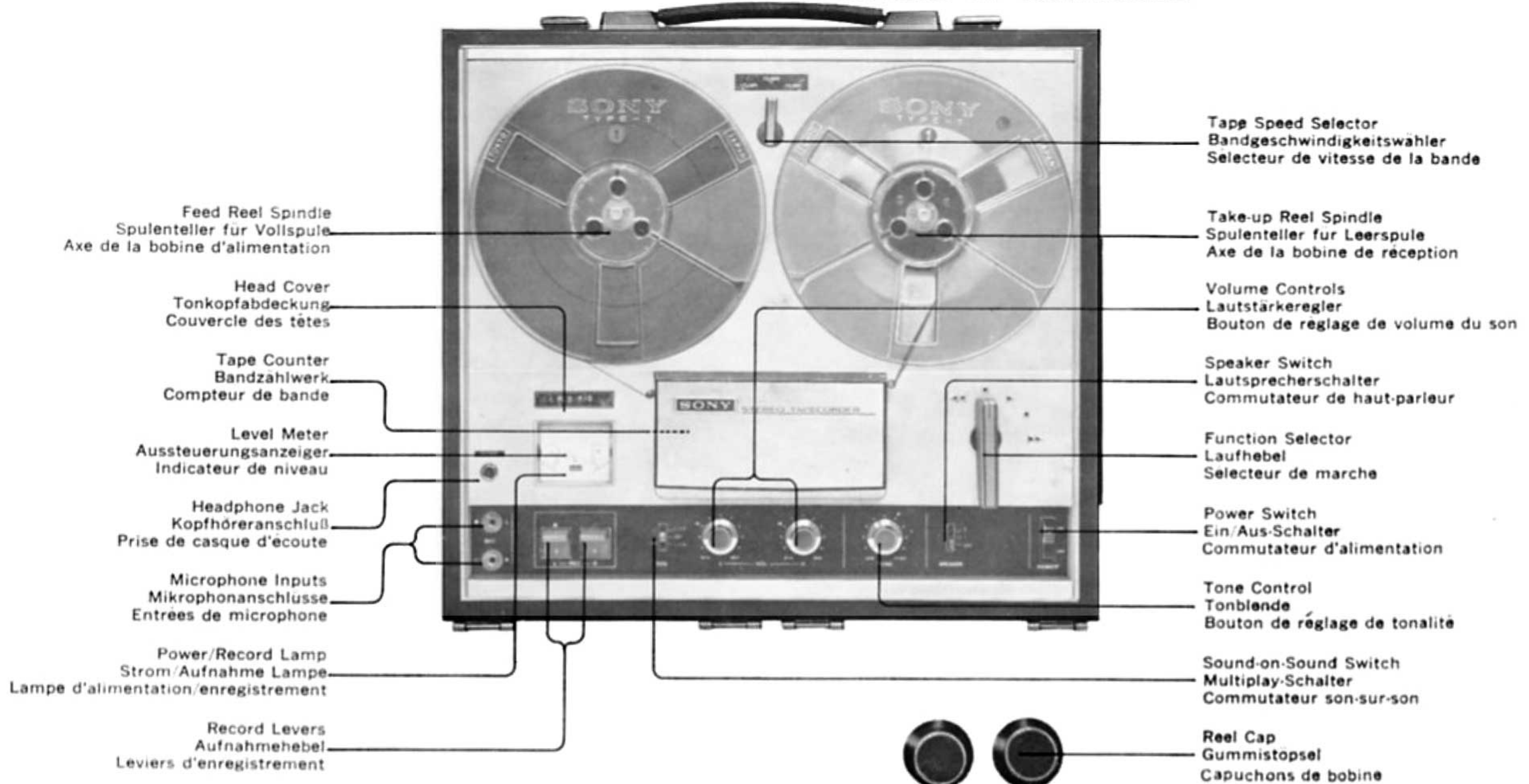
The set is adjustable for operating on either AC 100, 110, 117, 125, 220 or 240V; 50 or 60Hz. Before connecting the recorder to the power line, be sure to check whether the operating voltage and frequency of the recorder are correctly set to operate on your local power line. As to further instructions for this adjustment, see "Adaptation to the Local Power Line" on page 14.

## ENGLISH

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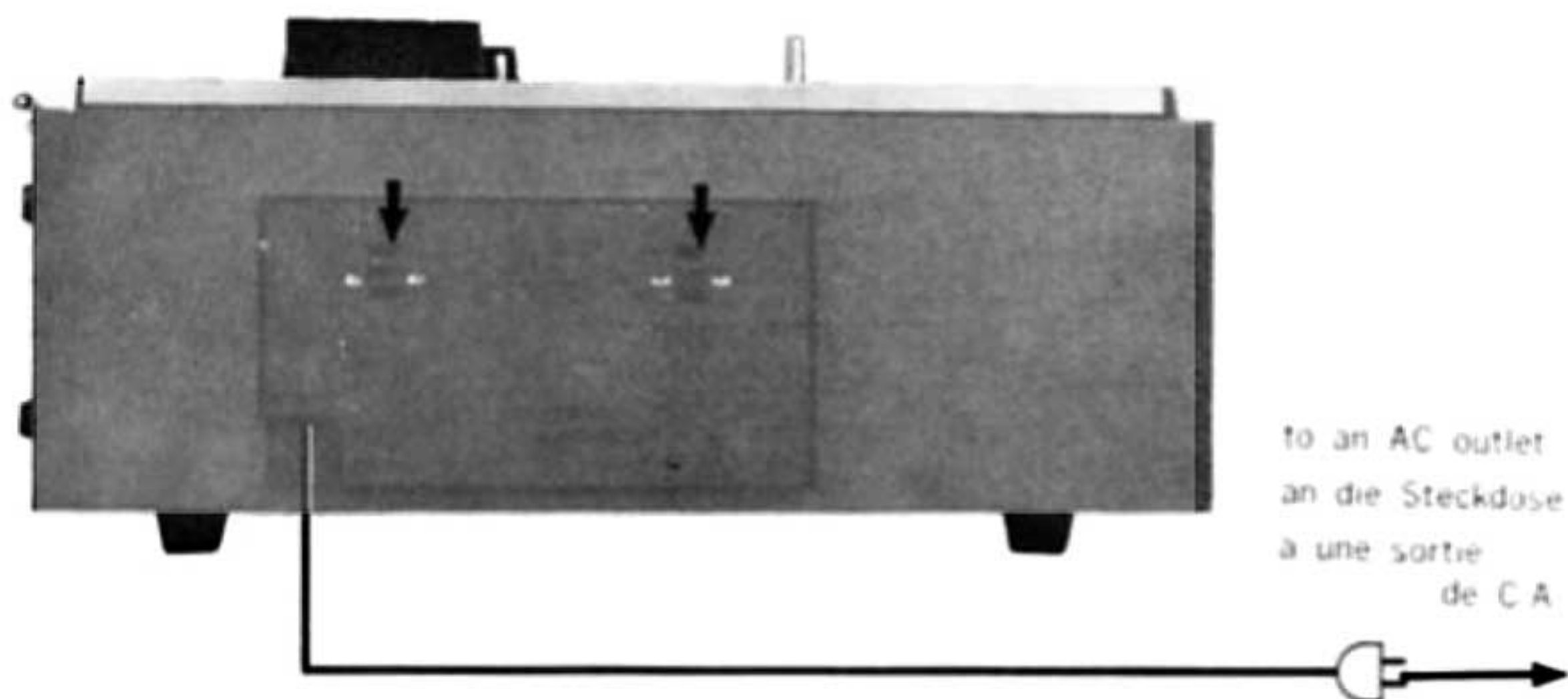
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## LOCATION OF CONTROLS



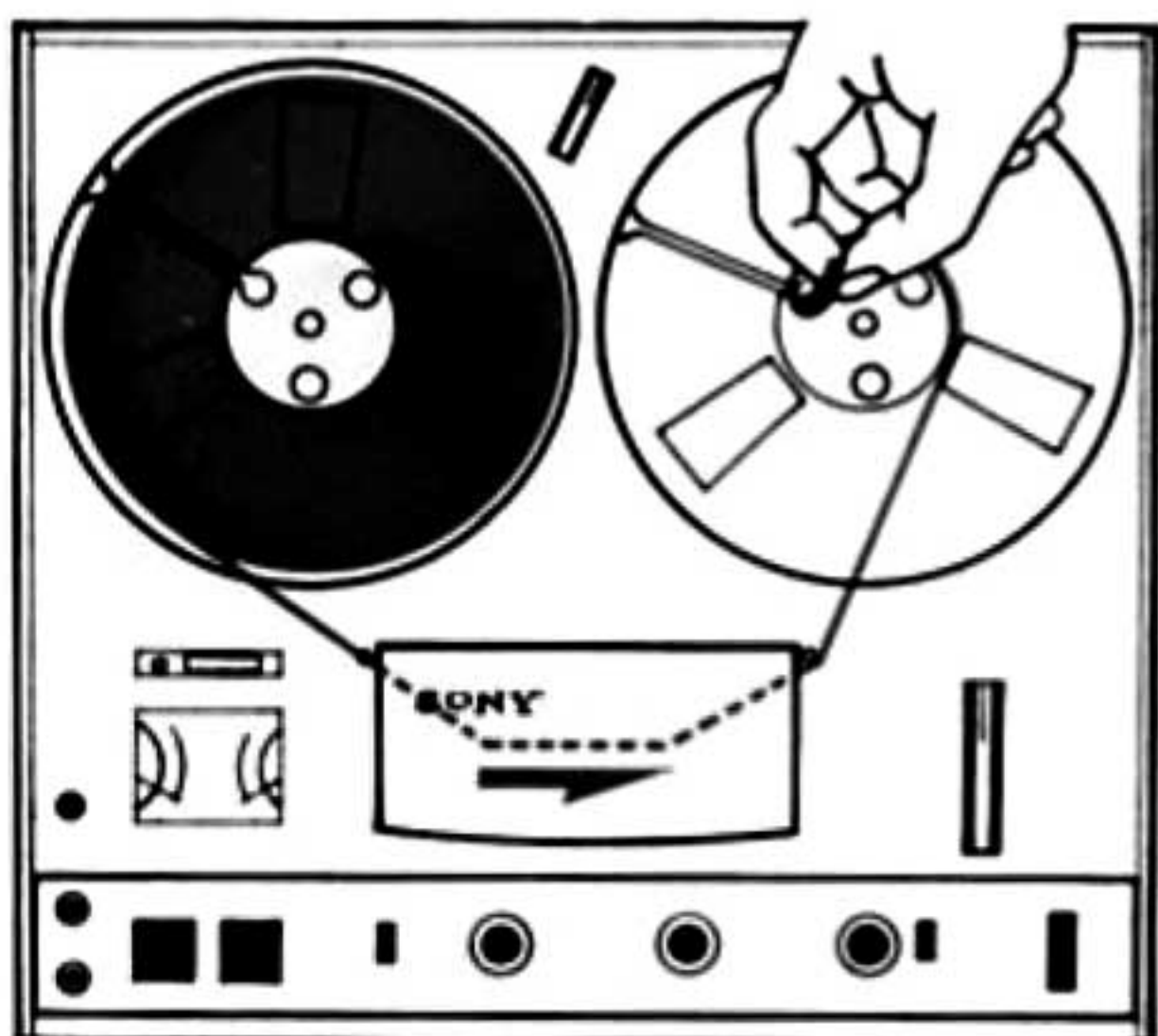
## NOTES

1. Keep the set away from extreme heat or moisture. Do not block the ventilation grille at the bottom of the set. Avoid any heavy mechanical shock.
2. Keep the heads clean to get best possible performance of the recorder. For cleaning information, refer to page 12.
3. The TC-252 can be used in either horizontal or vertical position. When in use vertically, make sure to place the reel caps on the spindles.
4. When recording through the Auxiliary Inputs, remove any input source connected to the Microphone Inputs, otherwise any input source connected to the Auxiliary Inputs will not be recorded.
5. Be sure the Sound-on-Sound Switch is turned off when sound-on-sound recordings are not being made.
6. The AC power cord and microphones are stored inside the compartment on the right side of the recorder.
7. When the set is not in use, the Function Selector must be placed in the stop [■] position.



## PREPARATION

1. Remove the lid speakers from the set and connect the speaker cords to the respective Speaker Outputs of the set.
2. Take the power cord from the compartment and connect to an AC outlet.
3. Place a pre-recorded tape on the Feed Reel Spindle with the side 1 up, and place an empty reel on the Take-up Reel Spindle.
  - ☆ When the recorder is used in vertical position, place the supplied reel caps on the spindles.
4. Thread the tape through the tape path under the head cover.





## STEREO PLAYBACK

1. Press the Power Switch to turn the power ON.
2. Set the Tape Speed Selector to the required speed of the pre-recorded tape.
3. Set the Speaker Switch to either position 1 or 2.
  - ☆ This switch turns the speaker on or off in either playback or record mode. In playback mode, switch position 1 or 2 has no relationship to the volume of the speaker.
4. Set the Function Selector to [▶] position, the tape will begin to move forward. Track-1 and track-3 will be played back.
5. Adjust the volume and tone controls.
6. To play back track-4 and track-2, invert and reverse the tape reels, and repeat steps 4 and 5 above.
  - ☆ In playback mode, the needles of the Level Meter do not swing.

### For fast forward

If you want to listen to the programs from various portions of the tape, turn the Function Selector to [▶▶]. When the tape reaches the desired portion, turn the Selector to [●] position and turn it again to [▶] position.

### For instant stop

To stop tape motion instantly at any desired time, turn the Function Selector to [●] position.

### For rewind

To rewind the tape, set the Function Selector to [◀◀].

### For private listening

Connect the SONY Stereo Headphone DR-5A (optional accessory) or any 8 ohm stereo headphone to the Headphone Jack. Set the Speaker Switch to OFF position and adjust the volume and tone quality of the headphone with each control knob.

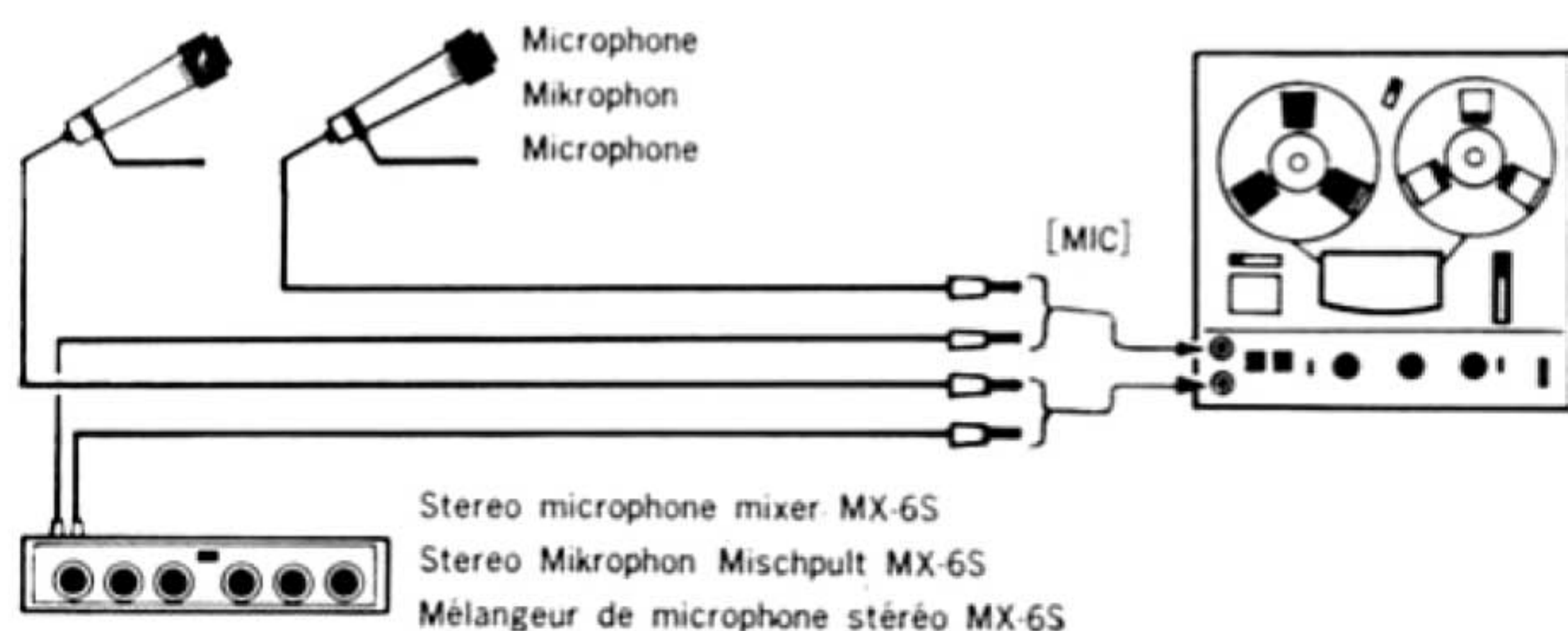
## MONOPHONIC PLAYBACK

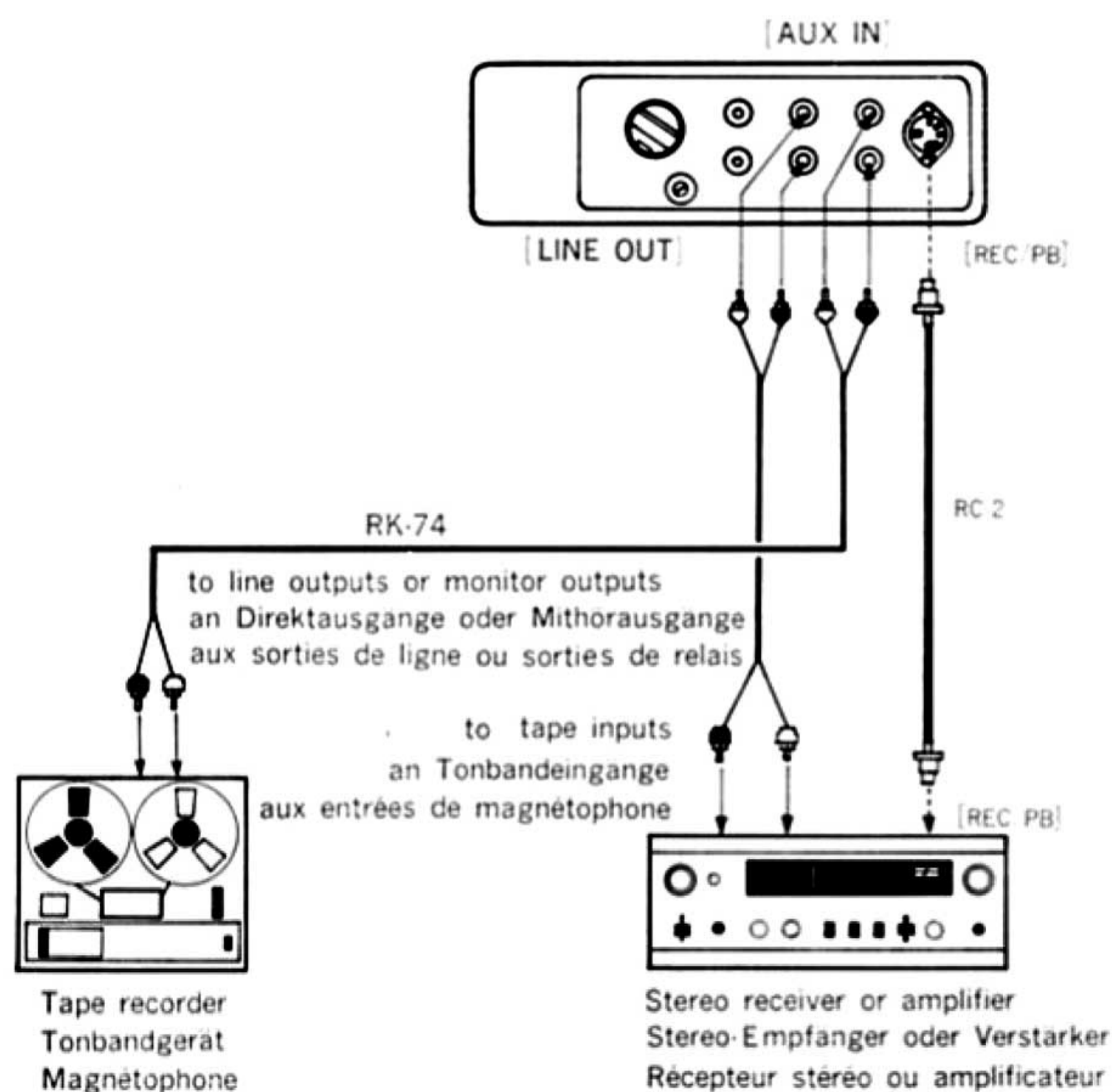
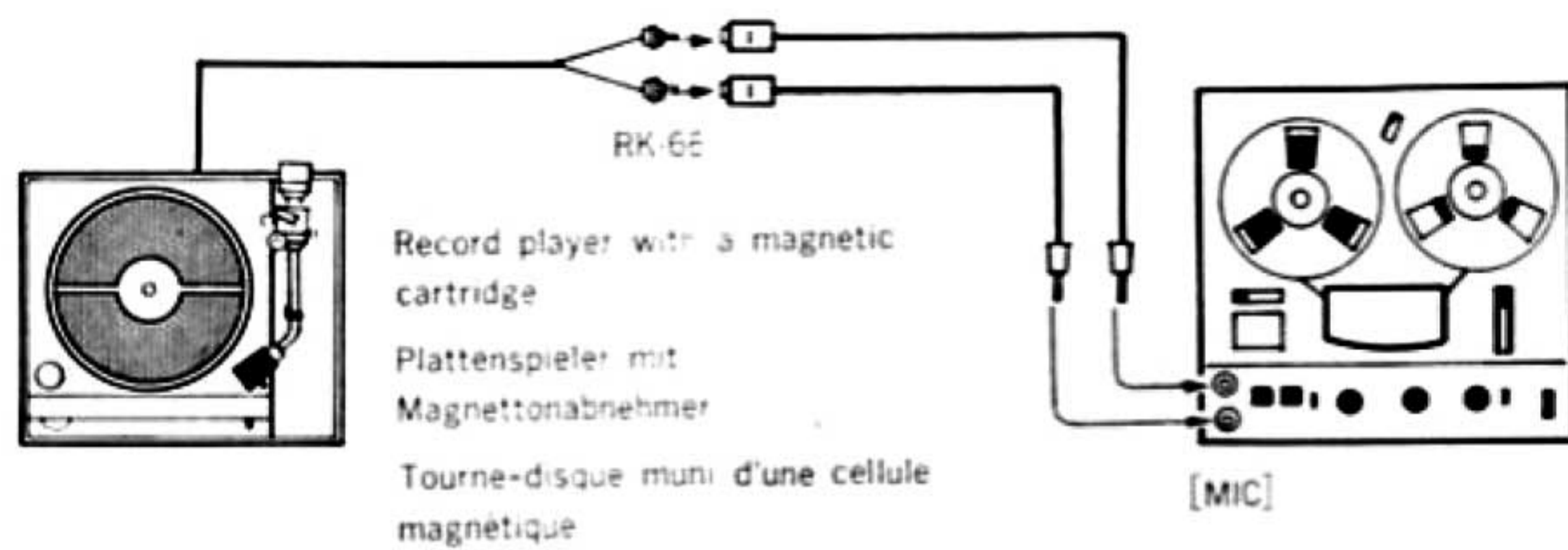
Monophonic playback procedures basically are the same as for stereo playback. Playback sequence of the tape should conform to the sequence of recording; track-1, track-4, track-3 and track-2. Track-1 and track-4 recordings are played back through the left speaker and track-3 and track-2 are through the right speaker. At the end of each track, do not rewind the tape, just reverse reel positions and proceed with playback.

## CONNECTION INFORMATION

### Microphone Inputs

Equipped with mini jacks with an input level of 0.19 mV, they will accept any high quality low impedance microphone (SONY F-25 supplied). These inputs can also be used with a telephone pickup SONY TP-4S (optional accessory), microphone mixer SONY MX-6S (optional accessory). If you have a record player equipped with a magnetic phono cartridge, use the magnetic phono connecting cord SONY RK-66 (optional accessory).





### Record/Playback Connector

The 5-pin socket is used for interconnection of inputs and outputs of the recorder to an amplifier that incorporates a matching socket. Use the single cable SONY REC/PB connector cable model RC-2 (optional) for connection. No additional connection is required. When using Auxiliary Inputs or Line Outputs, make sure to disconnect the cable from this connector.

### Auxiliary Inputs

Equipped with phono jacks. These inputs have an input level of 0.06V and an input impedance of 100K ohms. Accept outputs of a stereo tuner, receiver, or tape recorder. When recording through these inputs, make sure to disconnect any sound source from the Microphone Inputs.

### Line Outputs

Equipped with phono jacks. These outputs have an output level of 0.39V and a load impedance of 100K ohms. Use these outputs for dubbing tape, or reproducing programs through an external amplifier. While using an external amplifier, set the Volume and Tone Controls of the TC-252 as follows:

1. Set the Volume Controls to the mark [▼].
2. When using tape speeds of 7½ ips or 3¾ ips, set the Tone Control to the mark [▼].  
When using tape speed of 1⅞ ips, set the Tone Control to the position [HIGH].

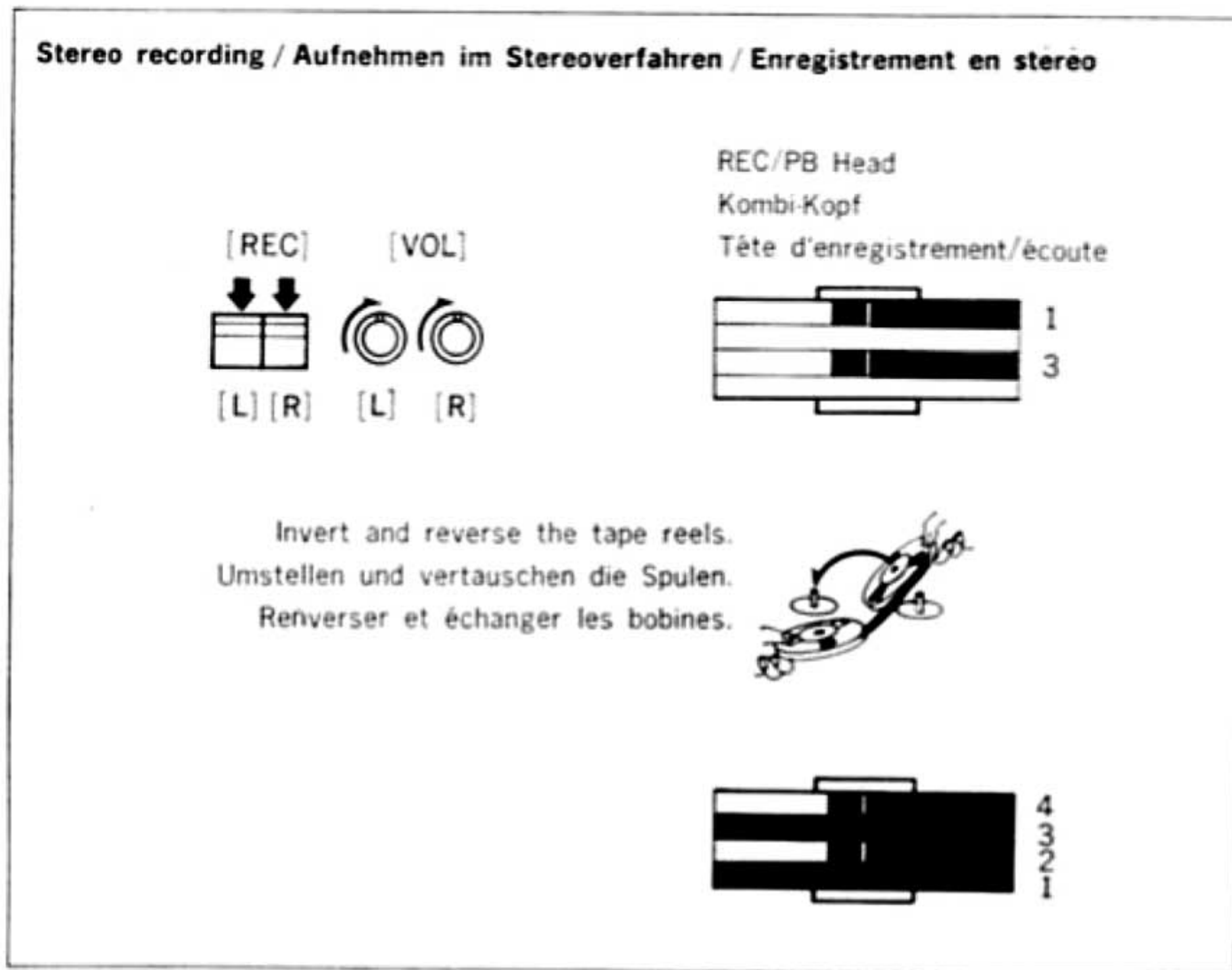
### Speaker Outputs

Connect the lid speakers to these outputs. Connect the left speaker to the output marked [L] and the right speaker to the output marked [R].

## STEREO RECORDING

1. Connect the desired sound source to the Auxiliary Inputs or to the Microphone Inputs referring to the "CONNECTION INFORMATION" on pages 4 and 6.
2. Turn the power on.
3. Place the tape on the Feed Reel Spindle with side 1 up and an empty reel on the Take-up Reel Spindle. Thread the tape.
4. Select the desired tape speed.
5. Set the figures on the Tape Counter to [0000] by pressing the Tape Counter Reset Button.  
☆ Be sure the Sound-on-Sound Switch is turned OFF.
6. Press the Record Levers until locked and adjust the record level by turning the Volume Controls. Deflection of the needle of the Level Meter to the boundary of the red and black zones provides normal recording level.  
☆ It is normal for occasional transient peaks to deflect the needle into the red zone.
7. While holding the Record Levers down, turn the Function Selector to [▶] position. The recording of track-1 and track-3 will start.





- When the recording of side 1 is completed, invert and reverse the reels on the spindles.  
Track-2 and track-4 recording can then be made.

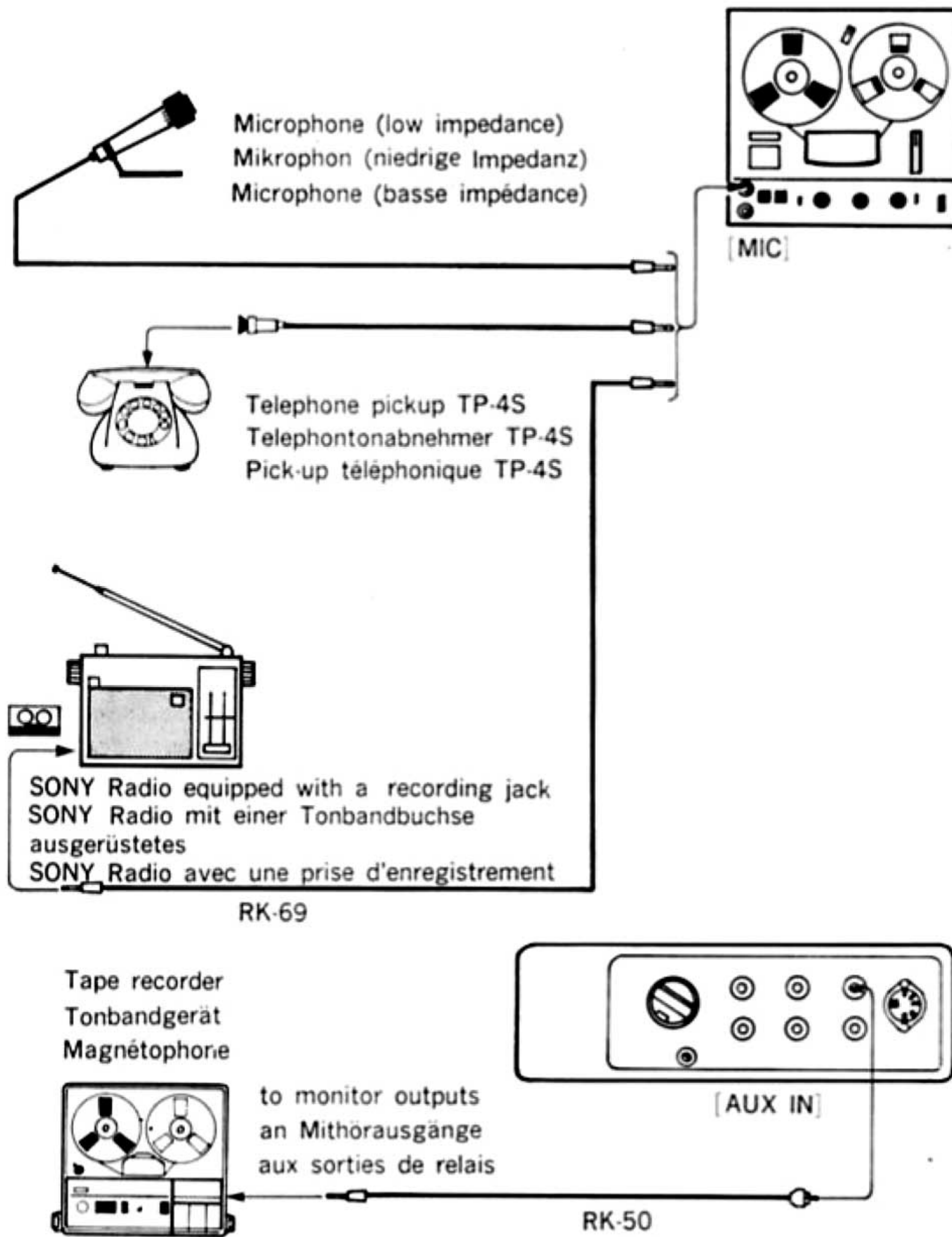
### Monitor while recording

While recording, monitoring through either speaker or stereo headphone is possible.

For speaker monitoring, set the Speaker Switch to either position 1 for low level or position 2 for high level.

For headphone monitoring, set the Speaker Switch to OFF position.

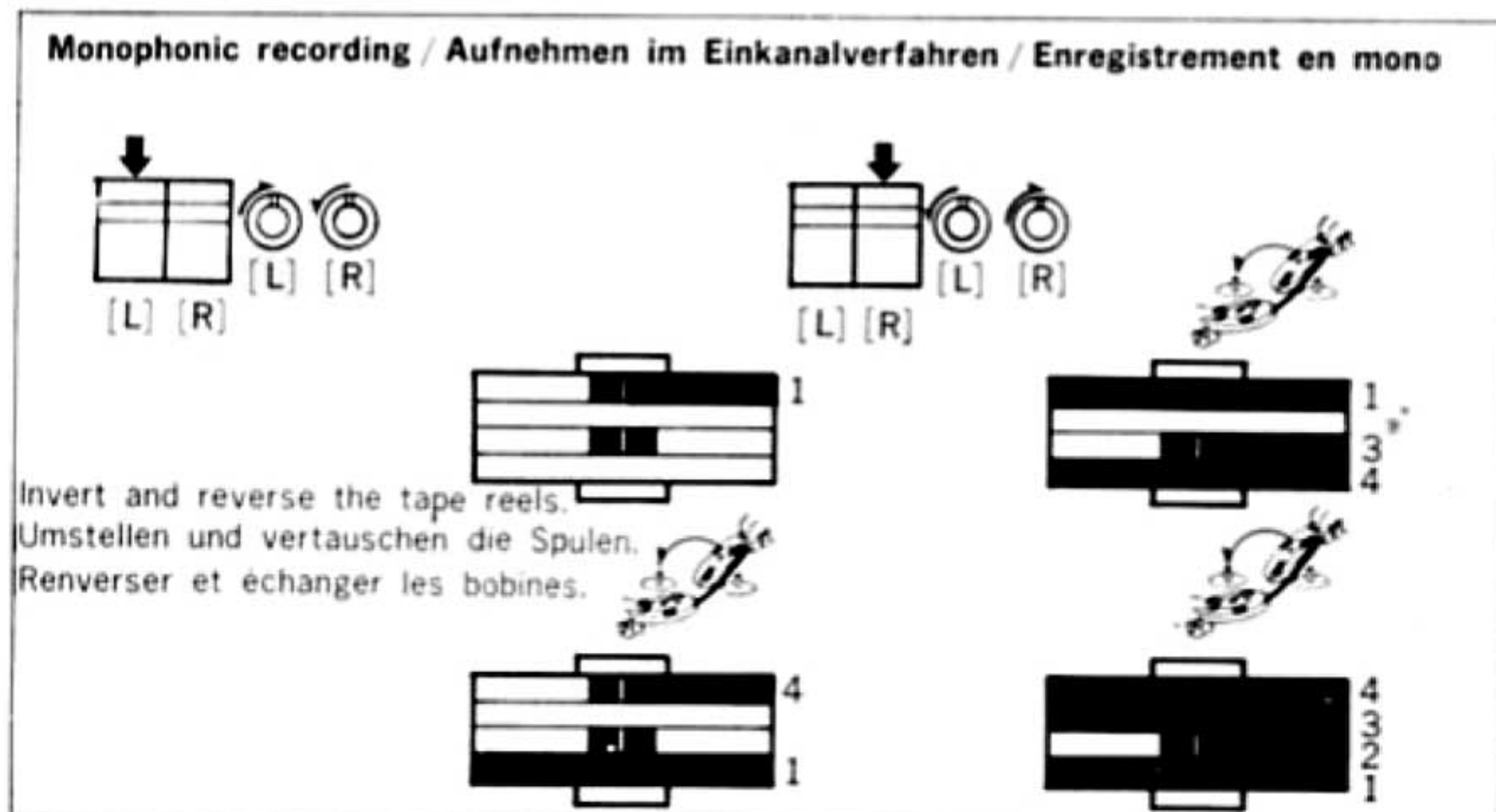
If howling (acoustical feedback) occurs between the speaker and microphone, set the Speaker Switch to position 1 or turn off the switch and use the headphone.



### MONOPHONIC RECORDING

The sequence of monophonic recordings should be track-1, track-4, track-3 and track-2.

- Connect the desired sound source to the [L] of the Auxiliary Inputs or to the [L] of the Microphone Inputs referring to the "CONNECTION INFORMATION" on pages 4 and 6.
- Turn the power on.
- Place the tape on the Feed Reel Spindle with the side 1 up and an empty reel on the Take-up Reel Spindle. Thread the tape.
- Select the desired tape speed.
- Set the figures on the Tape Counter to [0000] by pressing the Tape Counter Reset Button.  
☆ Be sure the Sound-on-Sound Switch is turned OFF.
- Press the Record Lever [L] until locked, and adjust the record level by turning the Volume Control [L]. Deflection of the needle of the Level Meter to the boundary of the red and black zones provides normal recording level.
- While holding the Record Lever [L] down, turn the Function Selector to [▶] position. The recording of track-1 will start.
- When track-1 is completed, invert and reverse the reels. Track-4 will then be recorded.
- To record on the track-3 and track-2, connect the program source to the [R] of the Auxiliary Inputs or the Microphone Inputs. Adjust the record level by locking the right Record Lever and turning the Volume Control [R]. Then, repeat the procedure of the track-1 and track-4 recording.



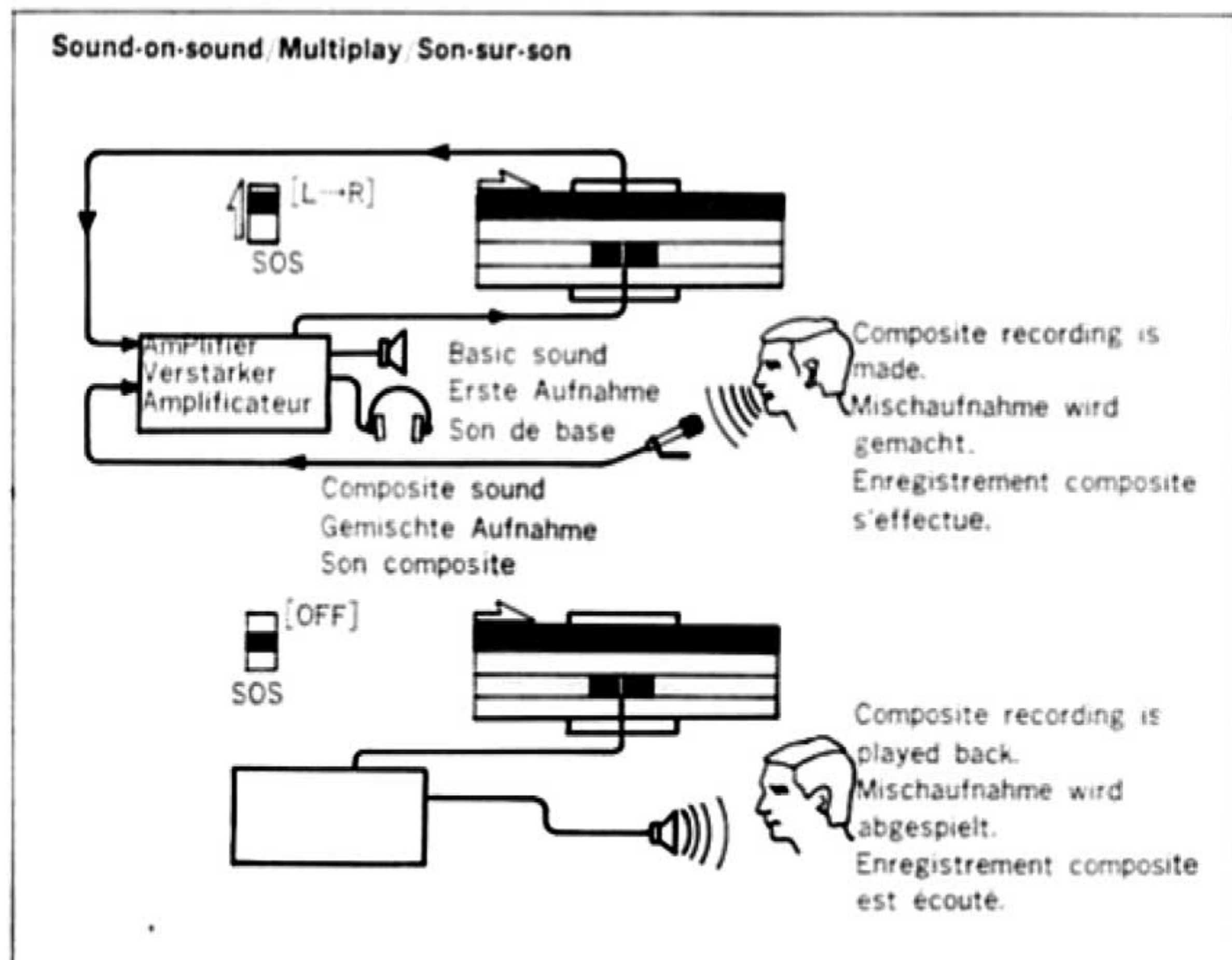
### SOUND-ON-SOUND RECORDING

The sound-on-sound facility of the TC-252 makes the composite recording from left channel to right channel, and vice versa possible. The marks at the Record Levers, Microphone Inputs and Sound-on-Sound Switch simplify the procedure for S. O. S. recording.



### A. Sound-on-sound recording on the right channel (Follow the mark L→R).

1. Record the basic program on the left channel according to the Monophonic Recording on page 8 and rewind the tape to the beginning.
2. Connect a microphone to the right Microphone Input.
3. Set the Sound-on-Sound Switch to [L→R] position.
4. While holding the Record Lever [R] down, turn the Function Selector to [▶] position. The composite information, basic program and microphone, is now being recorded on track-3.
5. From the left headphone (or speaker) the playback of left channel is heard, and from the right headphone (or speaker) the composite recording being made is heard. While listening to both channels, adjust the basic (left) sound level and after-recording sound (right) level by turning each Volume Control.
  - ☆ While adjusting the record level, be careful not to exceed the mark [▼] on the Volume Control.
6. When the end of the tape is reached, rewind it and play back track-3; the composite recording will then be played back through the right speaker.



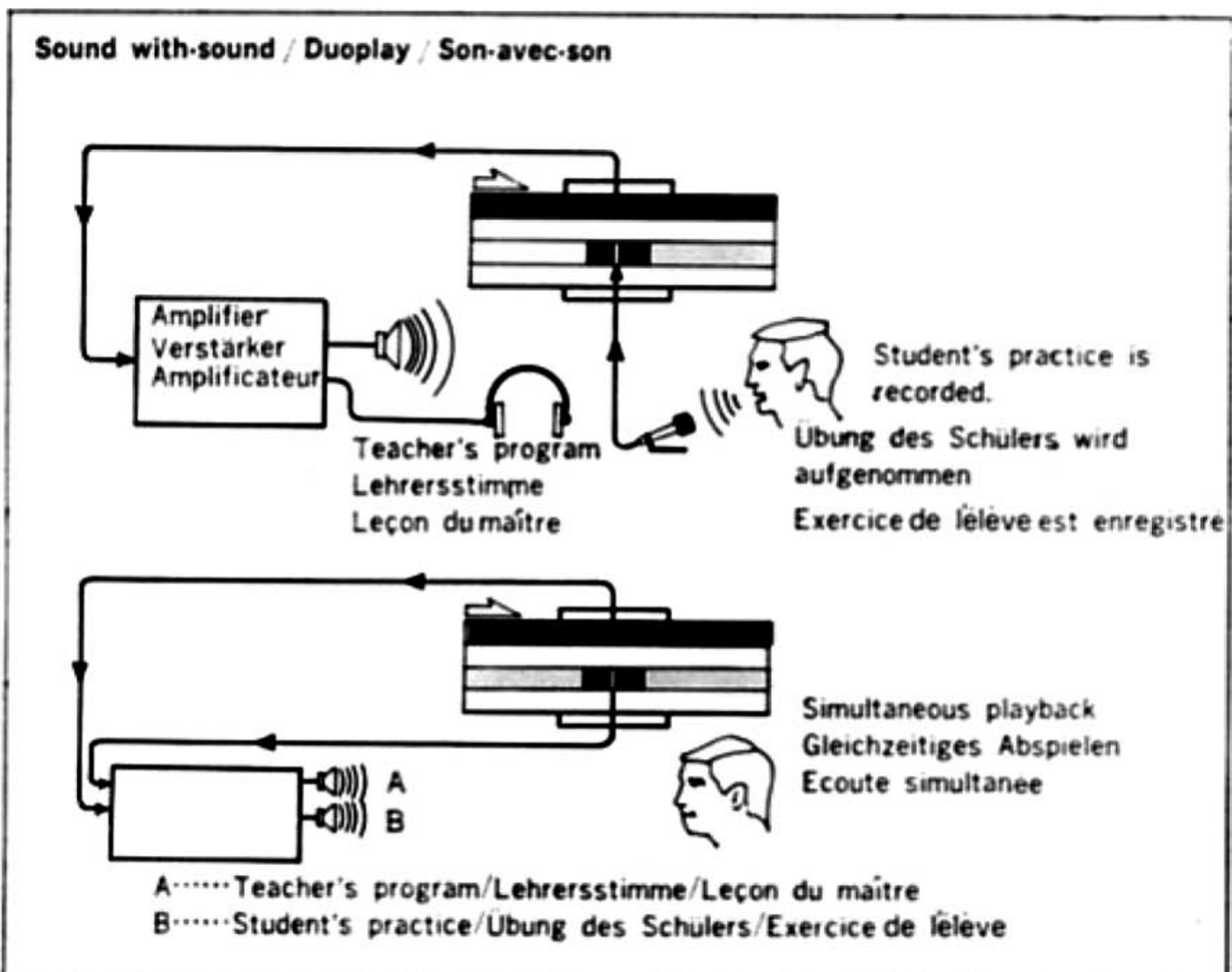
### B. Sound-on-sound recording on the left channel (Follow the mark R→L).

The recording procedure is the same as described above except for the channel used in each step.

## SOUND-WITH-SOUND RECORDING

This recorder provides facilities to play back one track while the other track is being recorded. This exclusive feature is ideal for language students who wish to listen to a pre-recorded lesson on one track while recording the answers or repetitions onto the other track. Both tracks can later be played back separately.

1. Record the teacher's program on the left channel.
2. Rewind the tape to the beginning of the master program.
3. Plug a microphone into the right Microphone Input.
4. While holding the Record Lever [R] down, turn the Function Selector to [▶] position. The master program will be heard through the left headphone (or speaker) and your practice is recorded on the right channel track.
5. To play back these programs simultaneously, rewind the tape to the beginning.



## PUBLIC ADDRESS

This recorder provides facilities for public address using the built-in amplifiers independent of tape motion.

1. Connect a microphone into the Microphone Input.
  - ☆ Keep the microphone further away from the speaker or reduce the volume as howling effect may be caused.
  - ☆ For stereo public address use the right and left facilities simultaneous!

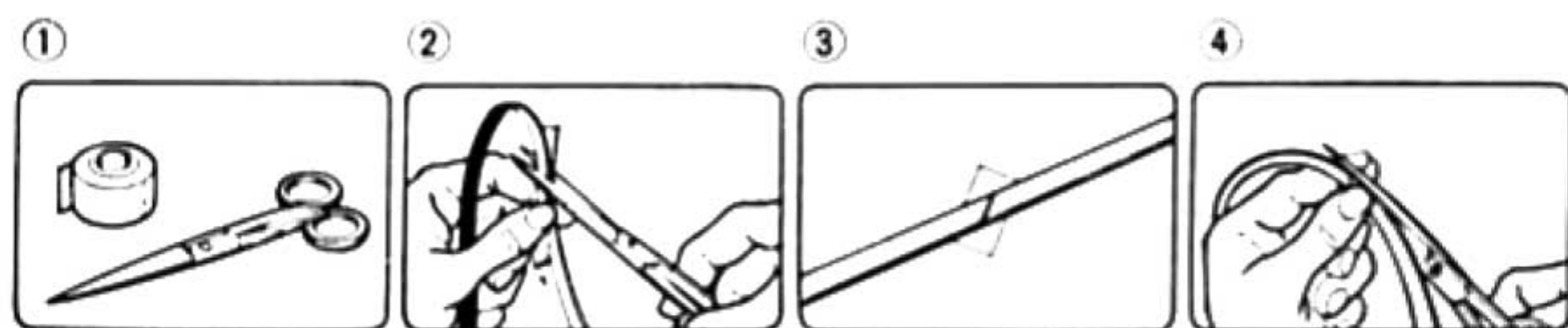
2. Set the Speaker Switch to position 2.
3. Lock the Record Lever.
4. Adjust the Volume Control and Tone Control

## ERASING TAPE

The erase head operates in record mode, therefore, every time you make a recording, any previous recording on the tape is automatically erased. You can also erase a tape without adding a new recording as follows.

1. Place the recorded tape which you want to erase on the Feed Reel Spindle.
2. Turn the Volume Controls fully counterclockwise and disconnect any input source.
3. While holding both Record Levers down, turn the Function Selector to [▶] position. While the tape is in motion, track-1 and track-3 will be erased. Tape speed of 7½ ips is recommended.
4. When erasing of track-1 and track-3 is completed, invert and reverse the reels. Track-4 and track-2 will then be erased.

By pressing only the Record Lever [L], track-1 will be erased and track-4 will be also erased when the reels are inverted and reversed. By pressing only the Record Lever [R], track-3 will be erased and track-2 will be also erased when the reels are inverted and reversed. For fast erasure, use a bulk eraser.



## SPLICING TAPE

1. Use splicing tape and a pair of scissors. Do not use ordinary cellophane tape as it tends to deteriorate.
2. Overlap the tapes to be spliced and make a diagonal cut across the overlapped position.
3. Place the two diagonal ends together, shiny side up, on a flat surface. Be careful to make ends meet, but not overlap. Then, place a piece of splicing tape over the joint.
4. Trim off the excess tape.

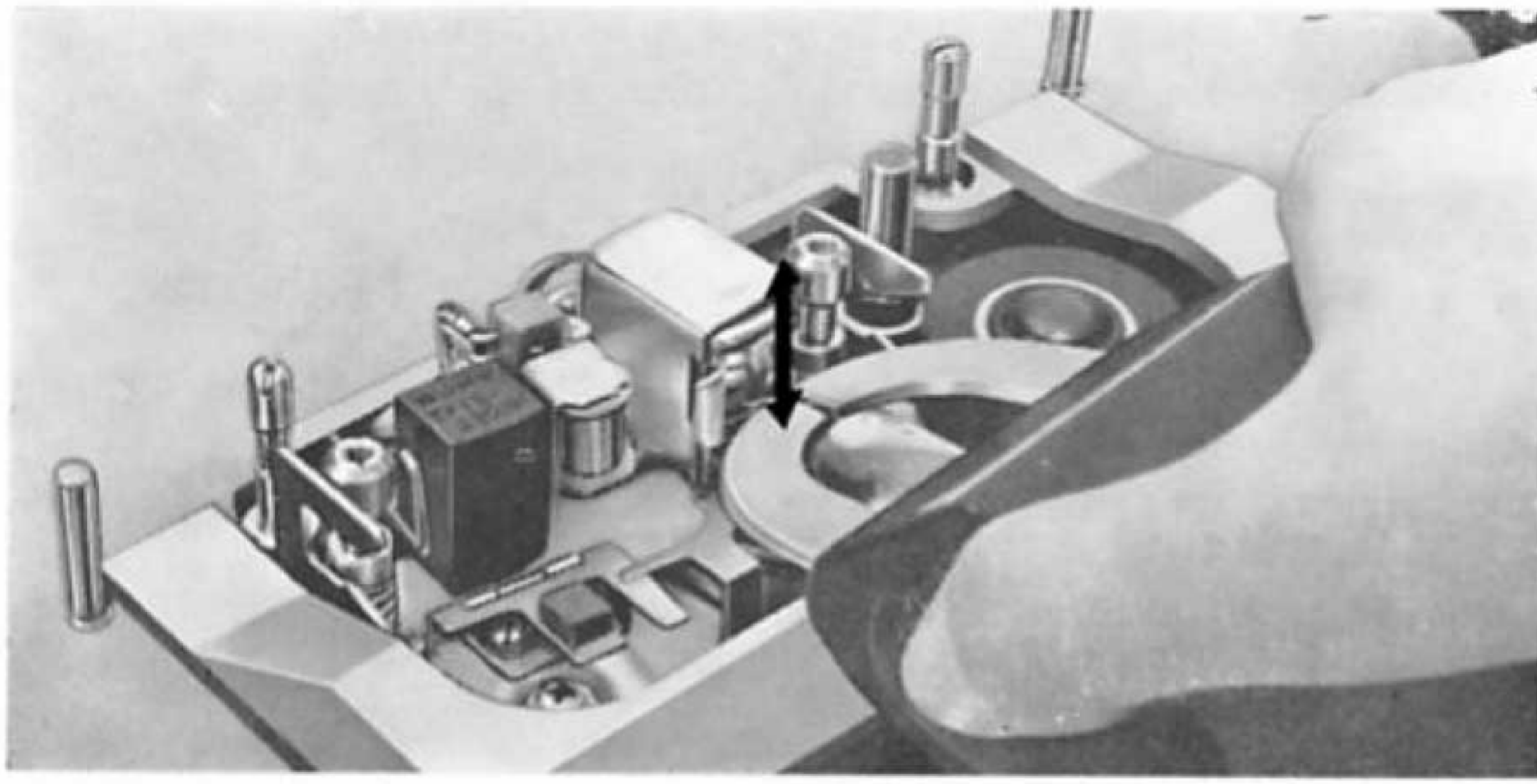


## MAINTENANCE

### Cleaning heads

Optimum performance will be assured by clean heads. Remove the head cover by pulling up. Take the supplied head cleaning tip or a soft cloth and wipe the heads and the tape guide over which the tape travels. When the deposits cannot be removed, moisten the tip or the cloth with denatured alcohol and repeat cleaning.





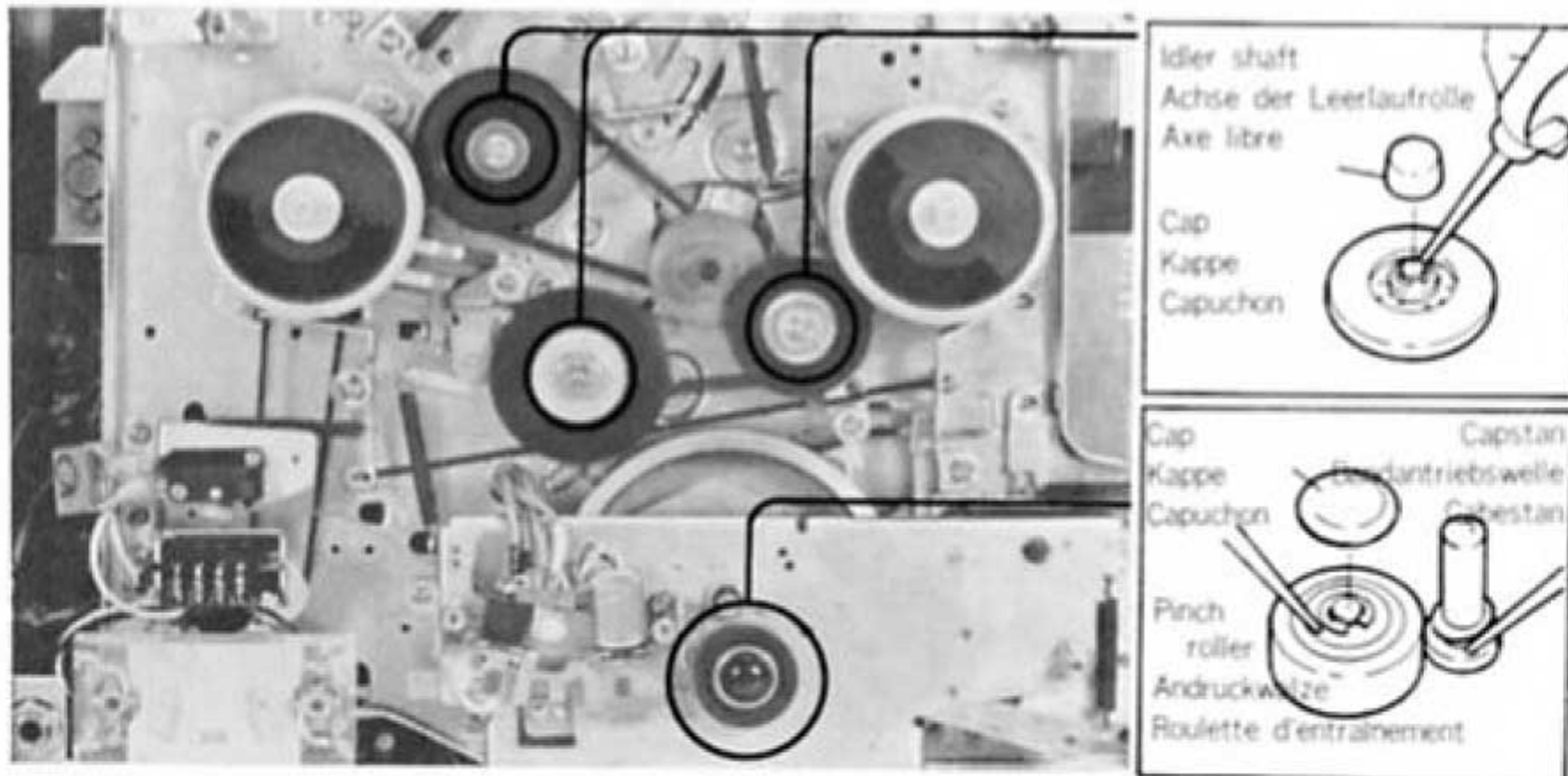
### Demagnetizing heads

Although the TC-252 incorporates a circuit to demagnetize the record head, under certain conditions such as prolonged playback, residual magnetism could gradually build up on the heads, causing degradation of tapes. Periodic use of the SONY HE-2 Head Demagnetizer is recommended to maintain optimum performance.

### Lubrication

Use light machine oil and lubricate capstan, pinch roller shaft and idler shafts every 6 months. Avoid excessive lubrication. It will cause slippage of the mechanism and contamination of your tape.

Remove the Function Selector by loosening a screw located beneath the lever. Remove the head cover, Tape Speed Selector and four screws from the top panel of the recorder and lift up the panel. Take out the caps of the pinch roller and the three idler shafts. Lubricate the capstan with 3 drops, and the idler shafts and the pinch roller shaft with 1 drop each of light machine oil.



## ADAPTATION TO THE LOCAL POWER LINE

### AC Voltage

The recorder can be set for operating on an AC power line voltage of either 100V, 110V, 117V, 125V, 220V or 240V by resetting the AC Voltage Selector located at the rear panel. To change the voltage setting, pull out the selector cap and reinsert it to the selector with the proper voltage figure appearing in the cutout of the selector cap.

### Line Frequency

For 50 Hz line :

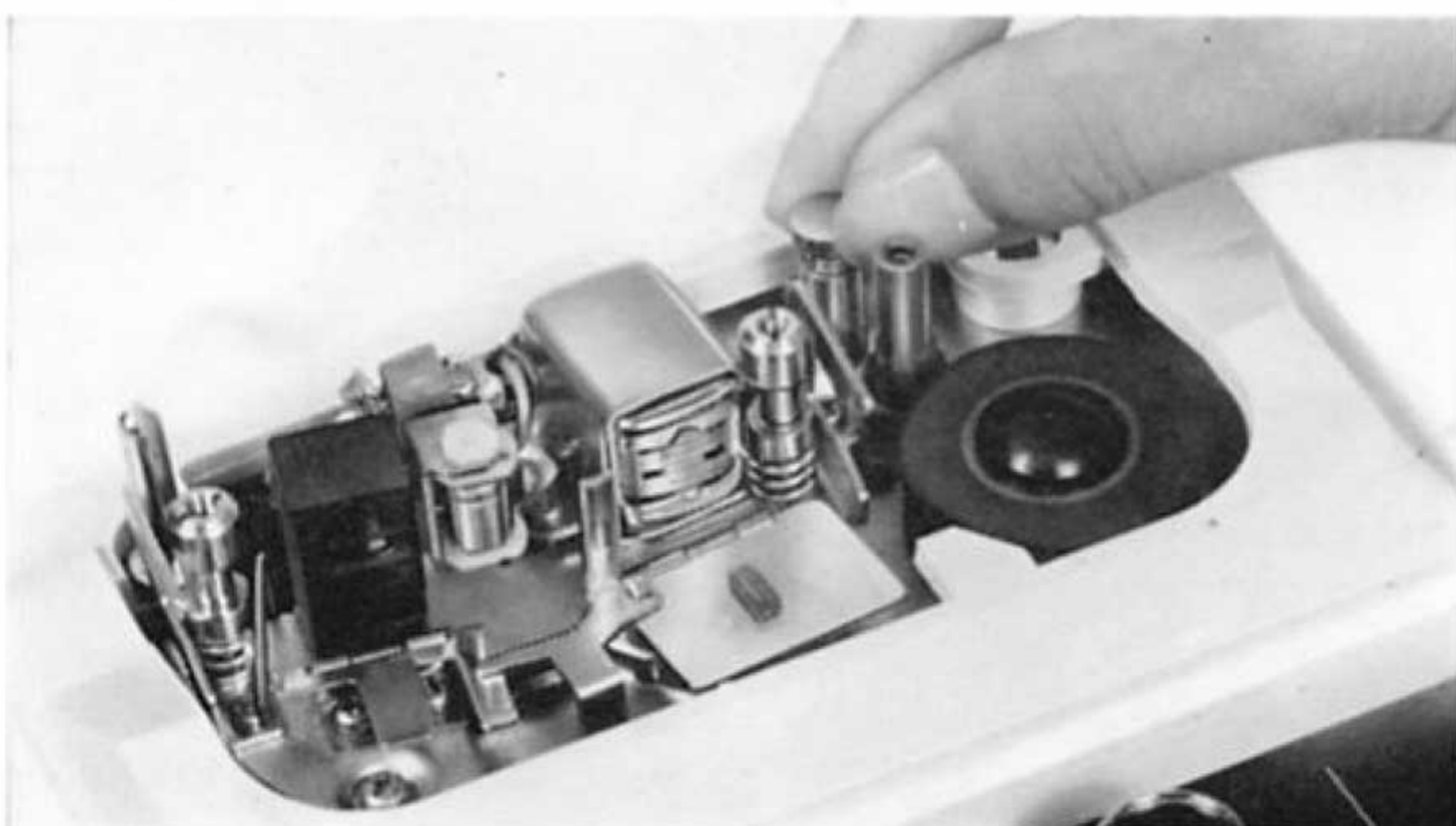
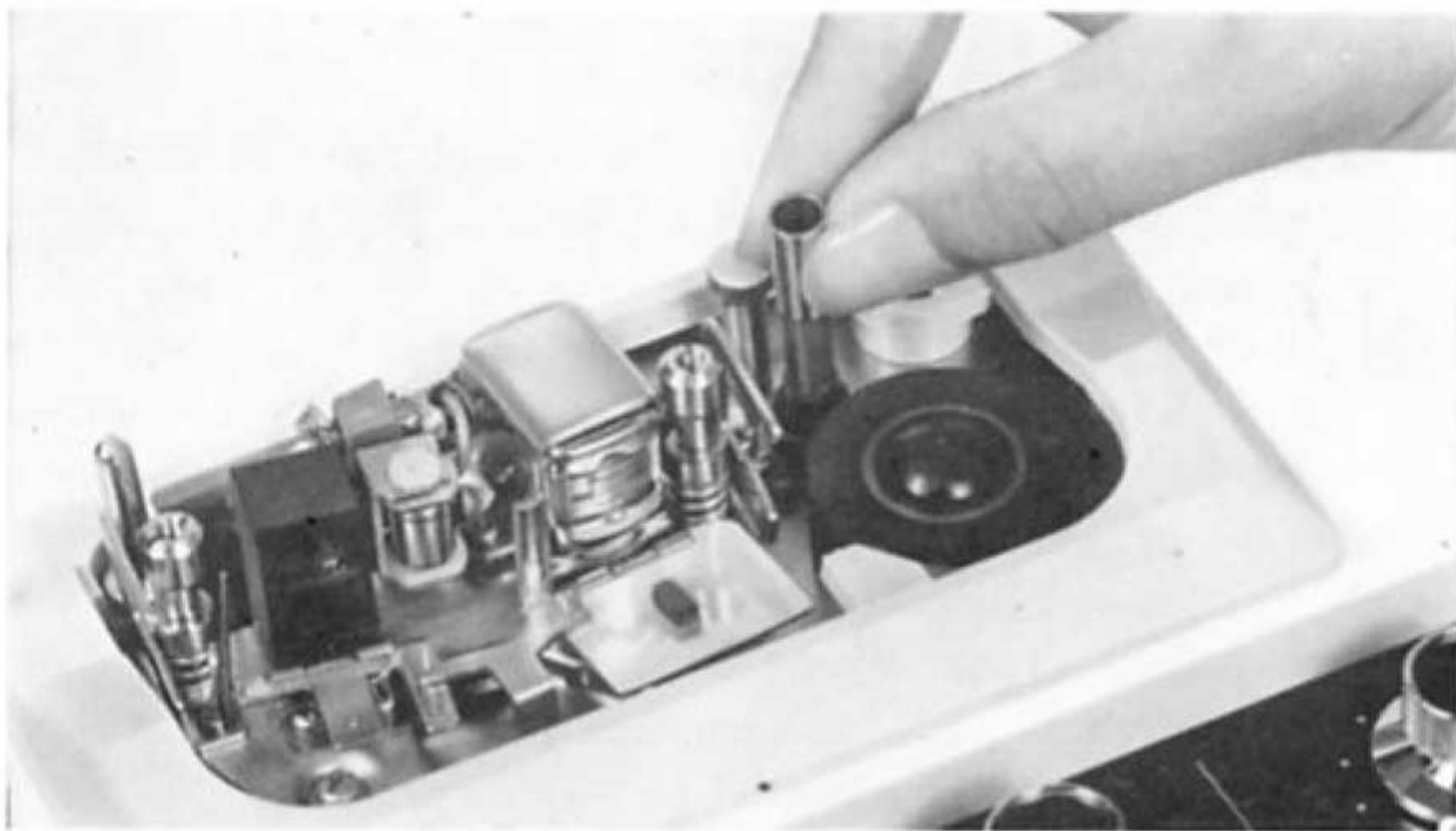
Set the Frequency Selector to the [50 Hz] with the use of a screw driver so that the slot of the screw head points to the mark [50 Hz].

Attach the capstan sleeve to the capstan: Take out the capstan sleeve from the sleeve holder located beside the capstan by loosening the retainer screw. Attach the capstan sleeve to the capstan by inserting the sleeve and securing it by the retainer screw.

For 60 Hz line :

Set the Frequency Selector to the [60 Hz] position.

Remove the capstan sleeve from the capstan: Turn the capstan clockwise, and while the capstan is in motion, quickly turn the notched upper portion of the retainer screw counterclockwise. The screw thread of the capstan will loosen. Then remove the capstan sleeve and place it on the capstan sleeve holder beside the capstan.



## SPECIFICATIONS

Power requirements:	Fixed type; AC 220V, 50 Hz, 30W Adjustable type; AC 100, 110, 117, 125, 220 or 240V, 50/60 Hz, 45W	Headphone Jack Impedance; 8 ohms Speaker Outputs Impedance; 8 ohms
Tape speed:	7½ ips, 3¾ ips and 1½ ips	Record/Playback Connector: Input impedance; 10k ohms Load impedance; 1k ohm
Reels:	7 inches or smaller	Power output: 4 watts × 2 (8 ohm speakers) 12 watts total dynamic power
Recording system:	4 track stereophonic or monophonic	Semiconductors: 20 transistors and 3 diodes
Frequency response:	30-18,000 Hz at 7½ ips 30-13,000 Hz at 3¾ ips 30-7,000 Hz at 1½ ips	Dimensions: 16½ (w) × 10½ (h) × 15 (d) inches Weight: 29 lb 13oz
Signal-to-noise ratio:	50 dB	Supplied accessories: Microphones F-25 dynamic SONY reel R-7A Connecting cord RK-74 Reel caps Head cleaning tip Demonstration tape Motor pulley (only for the adjustable type)
Flutter and wow:	0.12% at 7½ ips 0.15% at 3¾ ips 0.2% at 1½ ips	Optional accessories: Stereo microphone mixer MX-6S Stereo headphone DR-5A, DR-4A Magnetic phono connecting cord RK-66 Head demagnetizer HE-2 Telephone pickup TP-4S REC. PB connector cable RC-2
Recording time:	6 hours stereo, at 1½ ips with 1800 ft tape	Design and specifications subject to change without notice.
Inputs:	Microphone Inputs Sensitivity; -72 dB (0.19 mV) Impedance; 600 ohms Auxiliary Inputs Sensitivity; -26 dB (0.04V) Impedance; 100k ohms	
Outputs:	Line Outputs Output level; -6 dB (0.39V) Impedance; 100k ohms	

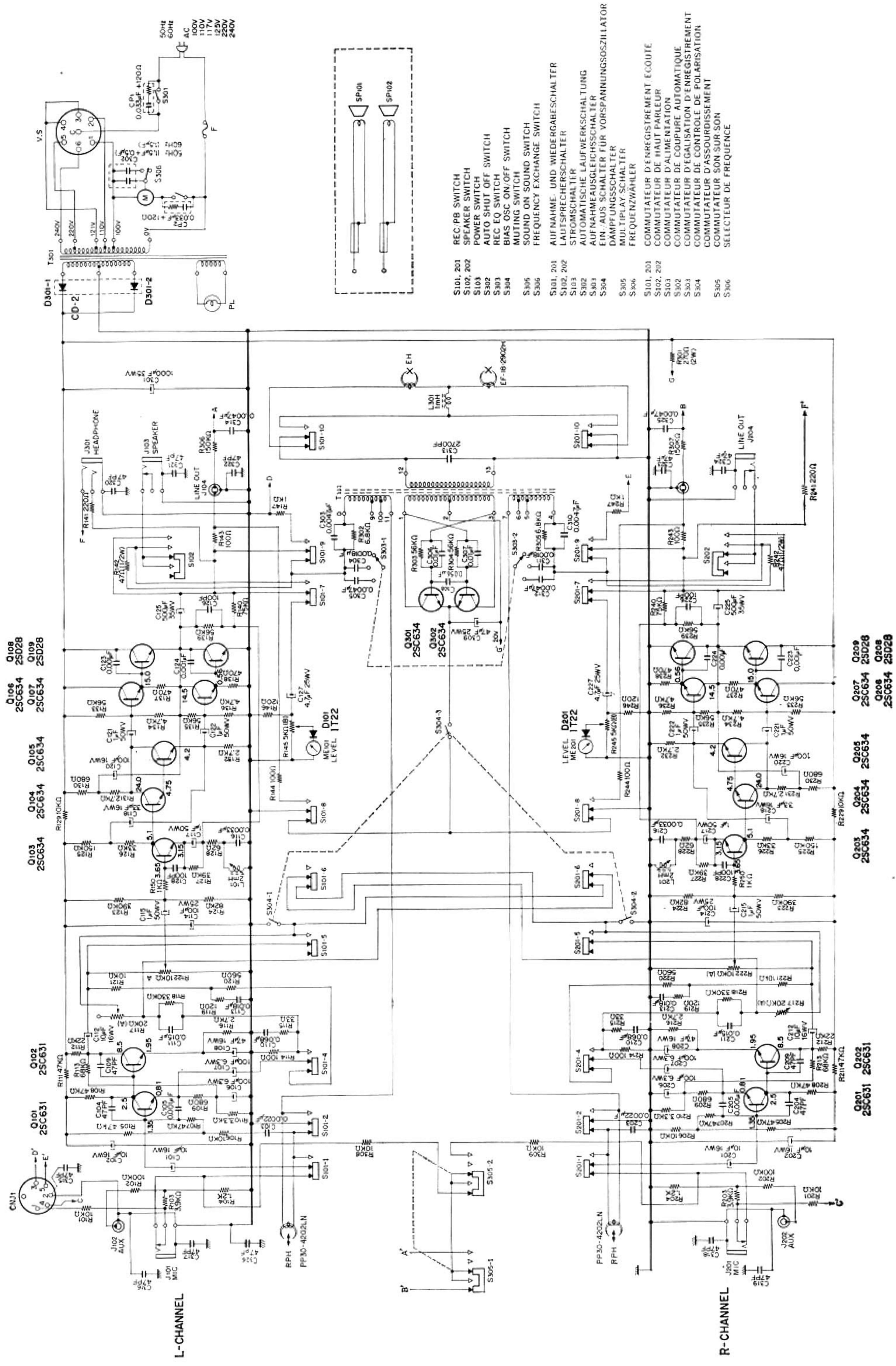
## TECHNISCHE DATEN

Stromversorgung:	Voreingestellte Ausführung; Wechselstrom 220V, 50 Hz, 30W Justierbare Ausführung; Wechselstrom 100, 110, 117, 125, 220 oder 240V, 50/60 Hz, 45W	Kopfhöreranschluß Impedanz: 8 Ohm Lautsprecherausgänge Impedanz: 8 Ohm
Band- geschwindigkeiten:	19 cm/Sek, 9,5 cm/Sek und 4,8 cm/Sek	DIN-Anschluß für Aufnahme und Wiedergabe: Eingangsimpedanz: 10 kOhm Ausgangsimpedanz: 1 kOhm
Spulen:	18 cm oder kleiner	Ausgangsleistung: 2×4 Watt (8 ohm Lautsprecher) 12 Watt gesamte dynamische Leistung
Aufnahmesystem:	4 Spuren Stereo/Mono	Halbleiterstückung: 20 Transistoren und 3 Dioden
Frequenzbereich:	30-18.000 Hz bei 19 cm/Sek 30-13.000 Hz bei 9,5 cm/Sek 30-7.000 Hz bei 4,8 cm/Sek	Abmessungen: 408(B)×256(H)×380(T) mm Gewicht: 13,5 kg
Signal- Gerauschniveau:	50 dB	Mitgeliefertes Zubehör: 2 Mikrophone F-25 (dynamisch) SONY Spule R-7A Verbindungskabel RK-74 Gummistopfen Reinigungspinsel für die Kopfe Vorführband Motorriemenscheibe (nur für die justierbare Ausführung)
Gleichlauf- schwankungen:	0,12% bei 19 cm/Sek 0,15% bei 9,5 cm/Sek 0,2% bei 4,8 cm/Sek	Sonderzubehör: Stereomischpult MX-6S Stereokopfhörer DR-5A, DR-4A Magnetisches Phonoverbindungskabel RK-66 Entmagnetisierer HE-2 Telefontonabnehmer TP-4S SONY DIN Verbindungskabel RC-2
Spieldauer:	6 Stunden Stereo, bei 4,8 cm/Sek mit 550 m Tonband	Anderungen in Technik und Aufmachung bleiben vorbehalten.
Eingänge:	Mikrophoneingänge Empfindlichkeit: -72 dB (0,19 mV) Impedanz: 600 Ohm Hilfseingänge Empfindlichkeit: -26 dB (0,04 V) Impedanz: 100 kOhm	
Ausgänge:	Direktausgänge Ausgangspegel: -6 dB (0,39 V) Impedanz: 100 kOhm	

## SPECIFICATIONS

Alimentation:	Type fixe; C.A. 220V, 50 Hz, 30W Type ajustable; C.A. 100V, 110V, 117V, 125V, 220V, ou 240V; 50/60 Hz, 45W	Prise de casque d'écoute Impédance: 8 ohms Sorties de haut-parleur Impédance: 8 ohms
Vitesses de la bande:	19 cm/s; 9,5 cm/s; 4,5 cm/s	Connecteur d'enregist- rement, écoute: Impédance d'entrée: 10 kohms Impédance de sortie: 1 kohms
Bobines:	17,8 cm de diam. ou moins	Puissance de sortie: 4 watts×2 (haut-parleurs de 8 ohms) 12 watts puissance dynamique totale
Système d'enregistrement:	4 pistes en stéréo ou mono	Semi-conducteur: 20 transistors et 3 diodes
Réponse de fréquence:	30-18.000 p/s à 19 cm/s 30-13.000 p/s à 9,5 cm/s 30- 7.000 p/s à 4,8 cm/s	Dimensions: 408 (L)×256 (H)×380 (P) mm Poids: 13,5 kg
Rapport signal/bruit:	50 dB	Accessoires fournis: Microphone dynamique F-25 Bobine SONY R-7A Fil de raccord RK-74 Capuchons de bobine Styleret de nettoyage de tête Bande de démonstration Poulie du moteur (seulement pour le type ajustable)
Fluctuations totales:	0,12% à 19 cm/s 0,15% à 9,5 cm/s 0,2% à 4,8 cm/s	Accessoires facultatifs: Mélangeur de microphone stéréo MX-6S Casque d'écoute stéréo DR-5A, DR-4A Fil de raccord phono magnétique RK-66 Démagnétiseur de tête HE-2 Pick-up téléphonique TP-4S Câble de connecteur d'enregistrement/écoute RC-2
Durée d'enregistrement:	6 heures en stéréo, à 4,8 cm/s avec bande de 550 m	Le dessin et les spécifications peuvent être changés sans préavis.
Entrées:	Entrées de microphone Sensibilité: -72 dB (0,19 mV) Impédance: 600 ohms Entrées auxiliaires Sensibilité: -26 dB (0,04V) Impédance: 100 kohms	
Sorties:	Sorties de ligne Niveau de sortie: -6 dB (0,39V) Impédance: 100 kohms	

# SCHEMATIC DIAGRAM/SCHALTТАFEL/DIAGRAMME SCHEMATIQUE



This block diagram is for the set whose operating voltage is adjustable.

Der Schaltplan wird nach dem Gerät gezeichnet, dessen Betriebsspannung umstellbar ist.

Le diagramme schématique montre le magnétophone dont le voltage est adjustable.