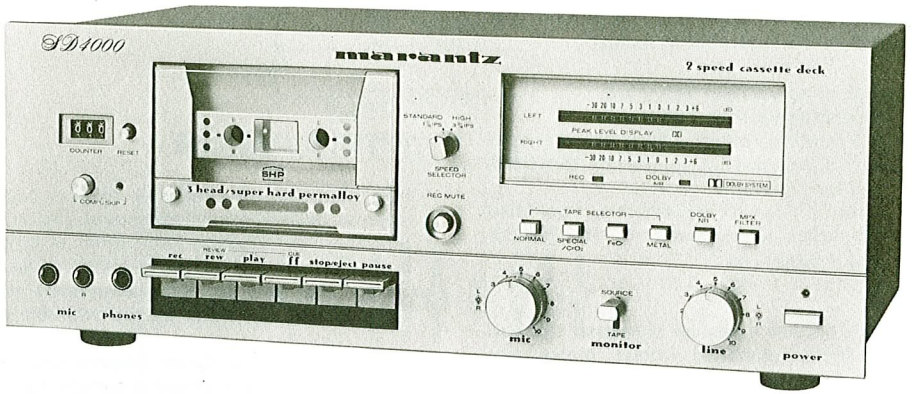
Model SD 4000

Model SD 3000, 5060M

OWNER'S MANUAL

STEREO
CASSETTE DECK



marantz®

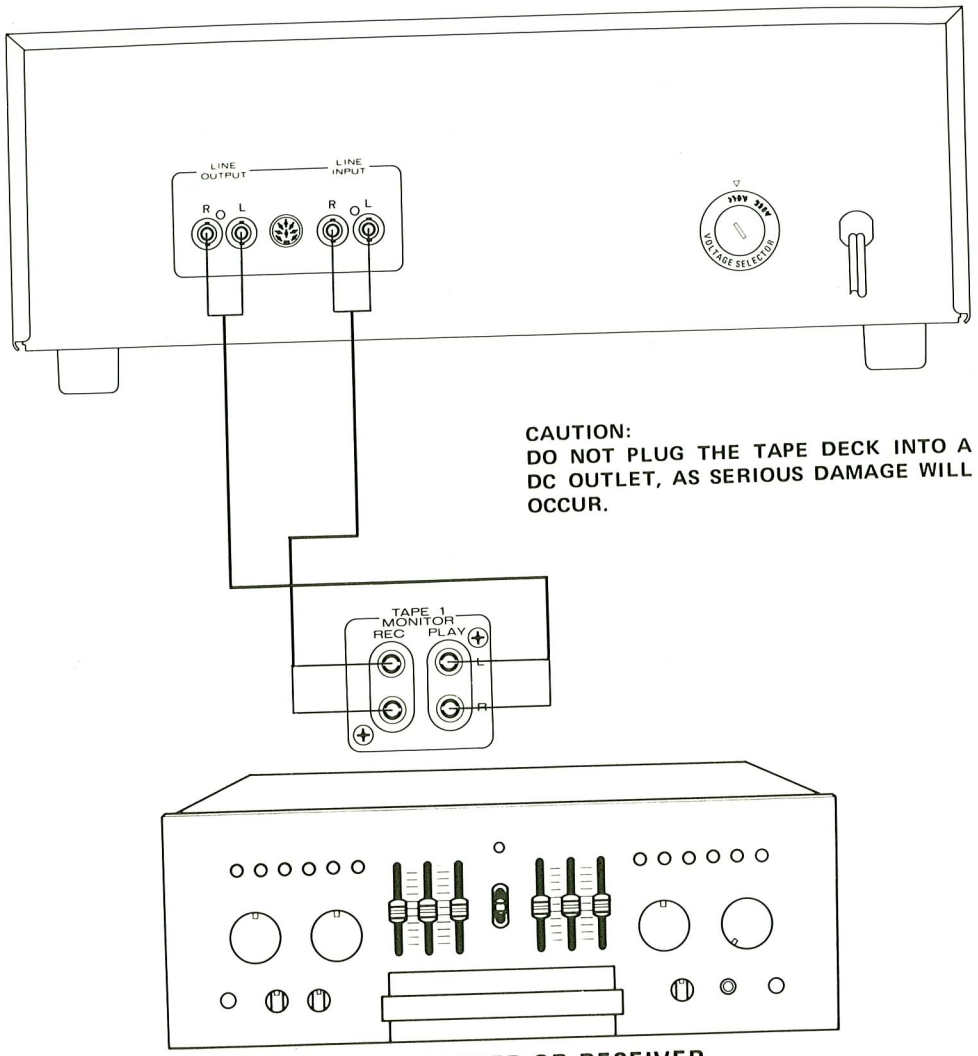
MARANTZ CO., INC. 20525 NORDHOFF STREET, CHATSWORTH, CALIFORNIA 91311
A WHOLLY-OWNED SUBSIDIARY OF SUPERSCOPE INC., CHATSWORTH, CALIFORNIA 91311

Printed in Japan

4276851312

REAR PANEL SIGNAL CONNECTIONS

MODEL SD 3000/SD 4000



CAUTION:
DO NOT PLUG THE TAPE DECK INTO A DC OUTLET, AS SERIOUS DAMAGE WILL OCCUR.

YOUR AMPLIFIER OR RECEIVER

ENGLISH TEXT

FOREWORD

To obtain maximum performance and enjoyment from your Stereo Cassette Deck, please study these instructions carefully. Installing and operating your deck is not complicated, but the flexibility provided by its numerous operating features merit your becoming familiar with its controls and connections. Our recommended procedure will assure you of securing the superb performance for which your Stereo Cassette Deck was designed.

For convenience, this manual is divided into two parts. The first part outlines a simplified operating procedure. The second part provides a more detailed description of the features of your Stereo Cassette Deck, and explains some of the finer points of recording techniques.

For quick identification of the many controls, connection facilities, and adjustments on your deck all references to them in this manual are printed in **BOLDFACE** type.

Your Marantz product has been specially prepared to comply with the household power and safety requirements that exist in your locale. Please check the alphabetical suffix following the serial number of your Marantz product. Refer to the following table to note the differences that exist between your unit and the unit pictured and described in this manual.

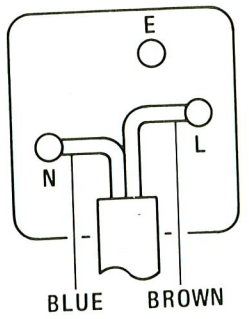
A – Operating Voltage: 240 V AC.
C – Operating Voltage: 120 V AC.
E, N – Operating Voltage: 220 V AC. A ground post is provided for connection to a bonified earth ground.
(This unit can be converted by a qualified technician to operate on 110-120/220-240 V 50/60 Hz)
P – Operating Voltage: 120 V AC.

Should it become necessary to convert this unit to a different operating voltage, please note that a proper fuse must be substituted for the one currently in the unit.

FOR UNITS SOLD IN THE UNITED KINGDOM:

IMPORTANT
The wires in this mains lead are coloured in accordance with the following code:

Blue	– Neutral
Brown	– Live



As the colours of the wires may not correspond with the terminal identification in your plug, proceed as follows:

Connect brown wire to the terminal marked "L" or coloured brown or red.
Connect blue wire to the terminal marked "N" or coloured blue or black.
For 13 A plugs, conforming to BS 1363, use a 3 A fuse.
For other plugs, use a 5 A or lower fuse in the plug or adaptor or at the distribution board.

AFTER UNPACKING

It is advisable to retain all original packing material to prevent damage should you wish to transport your Cassette Deck (refer to page 13 for repacking and shipping instructions). Be careful that you do not inadvertently throw away or lose the parts packed with the unit.

Please inspect your Stereo Cassette Deck carefully for any signs of shipping damage. Our very strict quality control and professional pride ensure that each tape deck left the factory in perfect condition. If the unit is damaged or fails to operate, immediately notify your dealer. If the unit was shipped to you directly, notify the transportation company without delay. Only you, the consignee, may institute a claim against the carrier for shipping damage. Save the carton and all packing material as evidence of damage for their inspection. If necessary, contact your dealer or, as a last resort, your Marantz importing agent, who will fully cooperate under such circumstances.

WARRANTY

FOR WARRANTY INFORMATION, CONTACT YOUR LOCAL MARANTZ DISTRIBUTOR.

RETAIN YOUR PURCHASE RECEIPT

YOUR PURCHASE RECEIPT IS YOUR PERMANENT RECORD OF A VALUABLE PURCHASE. IT SHOULD BE KEPT IN A SAFE PLACE TO BE REFERRED TO AS NECESSARY FOR INSURANCE PURPOSES OR WHEN CORRESPONDING WITH MARANTZ.

IMPORTANT

WHEN SEEKING WARRANTY SERVICE, IT IS THE RESPONSIBILITY OF THE CONSUMER TO ESTABLISH PROOF AND DATE OF PURCHASE. (YOUR PURCHASE RECEIPT OR INVOICE IS ADEQUATE FOR SUCH PROOF.)

GARANTIE

POUR LES CONDITIONS DE GARANTIE, VEUILLEZ VOUS ADRESSER A VOTRE DISTRIBUTEUR LOCAL.

GARDEZ VOTRE BORDEREAU D'ACHAT

VOTRE RECU D'ACHAT EST LA PREUVE PERMANENTE DE VOTRE ACHAT. IL DOIT ETRE CONSERVE SOIGNEUSEMENT POUR SERVIR DE REFERENCE ULTERIEURE DANS LES CAS NECESSITANT L'INTERVENTION DE L'ASSURANCE, OU EN CAS DE CORRESPONDANCE AVEC LA SOCIETE MARANTZ.

IMPORTANT

SI LE RECOURS A LA GARANTIE EST NECESSAIRE, LE CONSOMMATEUR DOIT FOURNIR LA PREUVE DE L'ACHAT ET LA DATE. DANS CE CAS, LE BORDEREAU OU LA FACTURE SERVENT DE PREUVE.

GARANTIE

INFORMATION ÜBER GARANTIE-BESTIMMUNGEN ERHALTEN SIE BEI IHREM ÖRTLICHEN MARANTZ-HÄNDLER.

BEWAHREN SIE IHREN KASSENZETTEL AUF!

IHR KASSENZETTEL DIENT IMMER ALS BEWEISUNTERLAGE EINES GETÄTIGTEN KAUFES. ER SOLLTE AN EINEM SICHEREN ORT AUFBEWAHRT WERDEN, UM IHN GEGEBENENFALLS FÜR VERSICHERUNGSZWECKE ODER BEIM BRIEFVERKEHR MIT MARANTZ VORZUWEISEN.

BEHALTEN SIE IHREN KASSENZETTEL!

FALLS SIE DIE GARANTIE IN ANSPRUCH NEHMEN WOLLEN, IST DER VERBRAUCHER FÜR DEN NACHWEIS DES KAUFES UND DES EINKAUFSDATUMS VERANTWORTLICH (DER KASSENZETTEL ODER DIE RECHNUNG GENÜGEN ALS BEWEIS.)

PURCHASER'S RECORD
ENREGISTREMENT D'ACHAT ▶
EINKAUFSURKUNDE

Model Purchased _____
Modèle acheté _____
Modellbezeichnung _____

Date of Purchase _____
Date d'achat _____
Datum des Kaufs _____

Place of Purchase _____
Lieu d'achat _____
Wo gekauft _____

Address _____
Adresse _____
Adresse _____

City _____ State _____
Ville _____ Province _____
Stadt _____ Land _____

Serial Number _____
Numéro de série _____
Seriennummer _____

QUICK REFERENCE INDEX

The drawings on page 37 provide a reference number for each of the front panel features. These numbers reference a descriptive paragraph about the feature and may be located in the FRONT PANEL FEATURES section.

Before proceeding with connecting your new tape deck, take a few moments to acquaint yourself with some of the features and terminology you will encounter in this book.

CONNECTING THE MODEL SD 3000 AND MODEL SD 4000

REAR PANEL SIGNAL CONNECTIONS

The drawing on page 2 shows the location of the input and output jacks on the rear panel. These jacks are for "permanent" connections. Front panel jacks and their use will be discussed later.

All connections to the rear panel should be made with the power to the entire system turned off. The rear panel signal connections should be made with shielded audio cables. To avoid confusion, connect one cable at a time between the deck and the other components of your system. This is the safest way to avoid cross-connecting channels or confusing signal source outputs with inputs. When connecting audio cables insert the connectors completely into the jacks. Loose connections may cause hum and noise.

LINE INPUTS

These jacks accept signals from any line level source. Therefore, these jacks should be connected to the set of tape output jacks on your receiver, which will supply signals from FM and other audio sources. If you own an audio system comprised of separate components, connect the **LINE INPUT** jacks of the tape deck to the tape output jacks of your preamplifier.

LINE OUTPUTS

Connect the **LINE OUTPUT** to the tape monitor input jacks of your receiver.

AC POWER SOURCE CONNECTION

With the **POWER** switch set to the OFF (out) position, plug the AC line cord into an AC outlet providing the proper voltage.

CAUTION:
DO NOT PLUG THE TAPE DECK INTO A DC OUTLET, AS SERIOUS DAMAGE WILL OCCUR.

If your receiver has a switched AC outlet on its rear panel, you may find it convenient to plug the deck into that outlet.

Now that you have connected your tape deck to your receiver and external tape recorder, you are doubtlessly eager to try it out. So, the following section will outline a simplified operating procedure to follow so you can begin recording and listening to your new Stereo Cassette Deck immediately. After becoming familiar with the Stereo Cassette Deck, you may then take advantage of its many features and operating versatility.

PREPARATION FOR USE

MECHANICAL INSTALLATION

Your Stereo Cassette Deck can be installed in three basic ways: In a beautiful walnut veneer cabinet for placement on a table or shelf, mounted in your own cabinetry or custom installation, or with mounting handles for a professional look.

WALNUT VINYL VENEER CABINET

An optional walnut-grained vinyl veneer cabinet may be obtained from your Marantz dealer. The case provides for proper ventilation, and can be placed on furniture or on a bookshelf. Complete instructions for installation are provided with the cabinet.

CUSTOM INSTALLATION

If you wish to install the tape deck in a custom cabinet, plan its location carefully. Pay close attention to the following requirements:

1. The Stereo Cassette Deck is air cooled. Allow plenty of space between the tape deck, cabinet surfaces, and other components for adequate ventilation.
2. Allow enough room behind the unit to run cables.
3. Because of its weight, the deck cannot be supported by its front panel alone. The chassis should be supported by an internal shelf, a bracket, or similar means. If a solid shelf is used, provide one inch wood spacers at each corner of the chassis to allow the unit to have proper clearance from the shelf.

The opening in the cabinet front will be 16" wide by 5-3/8" high. Since the front panel of the deck is larger than the cutout, it will neatly hide the edges of the cut. Remove the plastic feet from the bottom of the unit, and slide it through the opening.

CARRYING HANDLES

The optional carrying handles, Model RHA-8, may be obtained from your Marantz dealer. These rack mounting, style handles will give your Stereo Cassette Deck a professional look. They are designed for carrying and mounting the tape deck. Please note that the width of the cassette deck plus the rack handles is greater than the standard rack panel width, although the handles can be used effectively in custom installations.

OPERATING INSTRUCTIONS

First, set the controls and switches on the deck as follows:

POWER Switch	OFF (out)
TAPE TRANSPORT Controls	STOPPED
DOLBY NR Switch	OFF (out)
SPEED SELECTOR Switch (SD4000)	Select either **HIGH** or **STANDARD** tape speeds
BIAS/EQ SELECTOR Switches (SD 3000)	Place the **BIAS** and **EQ** switches to the proper setting to match the type of tape used.
TAPE SELECTOR Switches (SD 4000)	Depress the proper **TAPE SELECTOR** switch to match the type of tape used.
TAPE MONITOR (SD 4000)	**SOURCE**

After setting the controls and switches, record on a blank cassette as follows:

1. Depress the **POWER** switch.
2. Before inserting the cassette, take up the slack of the tape to prevent it from becoming entangled around the capstan. Twist the cassette hub inside the cassette with your fingernail or with a pencil. (See Figure 1)
3. Depress the **STOP/EJECT** button and open the cassette holder.

NOTE:
The STOP/EJECT button serves a dual purpose. To stop the tape in any mode, depress the button slightly. To eject the cassette, release the STOP/EJECT button, then press it again firmly.

4. Insert the cassette with the desired side for recording facing forward. Close the cassette compartment.
5. Play the audio signal source (phono, tuner, etc.) with the tape monitor switch on the receiver in the "source" position.
6. Press the **RESET** button on the tape **COUNTER** to reference the beginning of the recording.
7. Place the tape deck in the record mode: Depress the record (**REC**) and **PLAY** buttons simultaneously. The **REC** LED will illuminate.

CAUTION:
Do not attempt to manually lift the pushbuttons when they are in the depressed position. The pushbuttons are mechanically locked into position and can be released only by depressing the STOP/EJECT pushbutton. The PAUSE pushbutton can only be released by pressing it a second time.

NOTE:
The smoothest way to engage the record mode is to depress the REC button first. Then, while holding it down, depress the PLAY button.

8. Gradually increase the **LEFT** and **RIGHT RECORD LEVEL** Controls (in the SD 3000), or the **LEFT** and **RIGHT** LINE RECORD LEVEL Controls (in the SD 4000), while observing the **PEAK** LEVEL DISPLAYS. Adjust the level controls so that the loudest passages of the program illuminate the Displays as fully as possible without travelling beyond "0" on the scale. If the signal is allowed to illuminate the Displays beyond "0" during recording an audible distortion may occur.
9. Set the tape monitor switch on the receiver to the "tape" position.
10. *For Model SD 4000
    Set the **TAPE MONITOR** Switch on your cassette deck to the **TAPE** position.

NOTE:
The TAPE MONITOR Switch set in the SOURCE position during recording permits monitoring of the source signal. The TAPE position allows you to monitor directly off the tape what has just been recorded.

11. When your recording is completed, reduce the **LEFT** and **RIGHT RECORD LEVEL** Controls (for the SD 3000), or the **LEFT** and **RIGHT** LINE RECORD LEVEL Controls (for the SD 4000), to minimum and press the **STOP/EJECT** button.
12. Rewind the tape by depressing the **REWIND (REW)** button. The **REW** button will automatically "pop-up" when the beginning of the tape is reached.
13. Playback the tape by pressing the **PLAY** button. Your Stereo Cassette Deck is now playing back the tape you just recorded.

The following sections will explain the front panel features and some methods of adding more sophistication to your recording technique.

FRONT PANEL FEATURES

❶ PEAK LEVEL DISPLAYS

All conventional meters are "time sensitive" devices. They have inertia and are relatively sluggish when compared to the instantaneous nature of the audio peaks they read. Meters then indicate an average value reading with which to monitor the average level and balance of the two channels.

The **LEFT** and **RIGHT PEAK** LEVEL DISPLAYS on your Cassette Deck, unlike meters, accurately follow the strength of music signals. They react instantaneously to audio transients during recording. Distortion free high quality recordings may be obtained by setting proper record levels so that the **PEAK** LEVEL DISPLAYS do not travel beyond "**0**" into red on the scale.

❷ MPX FILTER

This switch activates the MULTIPLEX FILTER in your cassette deck. Its operation is explained in the "Multiplex Filter" section, page 11.

❸ DOLBY NR PUSHSWITCH

The **DOLBY NR** pushswitch activates the Dolby Noise Reduction circuitry in the tape deck. The DOLBY NR LED will illuminate once the **DOLBY NR** pushswitch is depressed. Its operation is explained in the "DOLBY NR SYSTEM" section, page 11.

❹ RECORD LEVEL CONTROLS

*For Model SD 3000
These control knobs are used to adjust record levels. To increase the recording levels, turn these knobs clockwise. To decrease, counterclockwise. When your microphones are plugged into the **MIC** jacks, the LINE inputs are automatically defeated.

For a LINE recording, microphones should be disconnected from the **MIC** jacks.

*For Model SD 4000
These control knobs are used for adjusting record levels. The controls designated MIC adjust the record level of microphones plugged into the **MIC** jacks and those designated LINE adjust the record level of any input connected to the rear panel **LINE INPUT** jacks.

NOTE:
When microphones are selected for recording, do not monitor through speakers, as this will cause howling (acoustic feedback) which could damage your audio equipment. Use headphones for monitoring.

❺ BIAS/EQ SELECTOR PUSHSWITCHES

*For Model SD 3000
These pushswitches select the proper bias and equalization to suit the three most common types of cassette tape. The chart below gives the recommended tape selector settings for each type of tape:

BIAS	EQ	Type of Cassette Tape
Low	Normal	Normal
Low	Special	Ferrichrome (FeCr)
High	Special	Special/Chromium dioxide (Special/CrO_2)

Set both **BIAS** and **EQ** when recording. Set only **EQ** for playback. For detailed information on tape selection, see "The Type and Brand of Tape to Use" on page 8.

*For Model SD 4000
The SD 4000 utilizes single **TAPE SELECTOR** pushswitches to select the proper bias and equalization for normal, ferrichrome (FeCr), Special/Chromium dioxide (Special/CrO_2) and metal tapes. Simply depress the appropriate pushswitch to match the type of tape used in both record and playback modes.

❻ TAPE MONITOR SWITCH

*Model SD 4000 only
The **TAPE MONITOR** switch allows you to monitor source (input) signals or tape signals.

In the **SOURCE** position, source (input) signals can be monitored during recording. This position also allows you to adjust the recording level without depressing any of the tape transport controls.

Because of the separate record and playback heads and electronics of the SD 4000, the **TAPE** position allows you to monitor what has just been recorded on the tape. You check for quality, correct mixing, and proper volume levels directly off the tape while still recording.

NOTE:
Output will be inhibited if the TAPE MONITOR switch is placed in the SOURCE position during playback.

❼ SPEED SELECTOR SWITCH

*For Model SD 4000
This control provides for the selection of either high (9.5cm/s) or standard (4.75cm/s) speeds. The type and brand of cassette you use has a great influence on the quality of your recordings. Improvement in the performance of the tape you choose may be obtained with the **SPEED SELECTOR** in the **HIGH** position. The high speed selection results in improved frequency response, dynamic range, and wow and flutter. The high speed is, therefore, beneficial when the highest quality recordings are desired. Recording time will be half that stated on the cassette when in the high speed. For example, a 60 minute cassette will record at half the time or 15 minutes a side for a total of 30 minutes. Standard recording time may be accomplished when utilizing the **STANDARD** (4.75cm/s) position.

NOTE:
We strongly recommend not to use C-120 cassettes when using the high speed (9.5 cm/s).

❽ RECORD MUTE

The **REC MUTE** switch is used to record a blank space onto the tape. Its operation and uses are explained in the "RECORD MUTE" section, page 11.

❾ TAPE COUNTER

The tape **COUNTER** can be used for easy reference and indexing of selections on any cassette. To reset the tape **COUNTER** to "000", depress the **RESET** button.

❿ PHONES JACK

This jack accepts headphones (optional) utilizing a standard three conductor phone plug. It is internally connected to the output circuitry to provide adequate sound level with low impedance stereo headphones. Two or more sets of headphones may be used with the aid of "Y" connectors (available at your dealer). However, output level will drop as additional headphones are added.

⓫ COMPUSKIP

When playing back a tape, this switch allows you to automatically locate the beginning of the previous or very next recorded program. Its operation is explained in the "COMPUSKIP" section, page 12.

⓬ MICROPHONE JACKS

These jacks will accept any low impedance microphone (optional) utilizing a standard ¼" phone plug.

MIC/LINE MIXING

*Model SD 4000 only
The MIC/LINE MIXING feature mixes a right channel microphone input with a right channel line input and a left channel microphone input with a left channel line input. To utilize this feature, adjust the recording level by turning the respective controls. The Peak Level Displays will indicate the composite recording level of the line and microphone inputs. Headphone monitoring will help set the level for mixing. After the stereo pairs of input signals are mixed in the exact proportions, if the Peak Level Displays register too high a reading, reduce all RECORD LEVEL Controls proportionately.

USING MIC/LINE MIXING WITH OTHER EQUIPMENT

*Model SD 4000 only
The MIC/LINE MIXING feature can be used with a reel-to-reel recorder, with a public address system, or with any other external equipment independent of cassette operation.

All the mixing controls are used exactly the same as when recording a cassette. The exception, of course, is that a cassette is not recorded.

The external equipment to which the mixture is applied must be connected to the **LINE OUTPUT** jacks.

To activate the MIC/LINE MIXING feature, simply place the **TAPE MONITOR** switch in the **SOURCE** position. Then adjust the individual MIC and LINE controls to the desired mixing proportions. When using microphones you should monitor through headphones as feedback may occur if you monitor through your speaker system.

If you wish to record a cassette at the same time, place a cassette in the cassette compartment and depress the **REC** and **PLAY** pushbuttons simultaneously.

MAKING OPTIMUM CASSETTE RECORDINGS

Your Stereo Cassette Deck, augmented by its built-in Dolby Noise Reduction System, is capable of making really excellent recordings. But the quality of recording can also be negatively influenced by some other very important factors. Inferior tape, poorly maintained heads, and improperly set recording levels can spoil your recordings. So that you can realize the full potential of your investment, the following section will explain a few techniques of skillful recording.

THE TYPE AND BRAND OF TAPE TO USE

In cassette recording the type and brand of cassette you use has a great influence on the quality of your recordings. Therefore, it is advantageous to purchase the highest quality cassettes available. Chromium dioxide (CrO_2) and Ferrichrome (FeCr) tapes provide better fidelity than normal tape. When using these kind of tapes, depress the appropriate **BIAS/EQ** selector pushswitches on the unit to provide the correct bias and equalization to suit the characteristics of the tape.

We recommend the use of tapes with a recording capacity of 90 minutes or less. In production we are using the following tapes for checking:

Bias/Eq	Ref Tape		
Normal	TDK	AC-211	(C-60)
Special/CrO_2	TDK	AC-511	(C-60)
FeCr	SONY	CS-30	(C-60)

The best characteristics can be obtain from the tapes given above. However, we can assure quality performance of our tape decks using tape selected from the following table.

NORMAL	
BASF	Ferro Super LH1
FUJI	Range 2, Range 4
MAXELL	UL, UD, UD XLI
SCOTCH	Master I, Hi-Energy, Tartan, Crystal
SONY	HF, FP
AGFA	Super Color, Super Ferro Dynamic I
AMPEX	Plus, Studio Quality 20/20
EMI	Hi-Fidelity
TDK	D, AD
MEMOREX	MRX_2, MRX_3
PHILIPS	Super Ferro 1

SPECIAL/CrO_2	
SCOTCH	Master II
MAXELL	UD XL II
TDK	SA
FUJI	Range 4 X
SONY	JHF
BASF	Chromdioxid Super
AGFA	Super Chrom
PHILIPS	Chromium
FeCr	
BASF	FCR
SONY	Duad
SCOTCH	Classic, Master III
AGFA	Carat
PHILIPS	Ferro Chromium

PROPER RECORDING LEVEL

One of the beauties of music is its dynamic range, in other words, the contrast of very soft to very loud passages. To capture this contrast on tape requires that the recording levels be set so that the loudest passages you intend to record don't saturate the tape and cause distortion. Yet, the recording levels shouldn't be set too low, because the soft passages would simply disappear in the residual noise. The proper technique is to anticipate the loudest music passages you want to record and set the recording levels using the Peak Level Displays as a guide before any recording actually takes place.

If, for example, you are recording from a phonograph record, you should at the outset find the loudest section of the record. To set the recording levels on your tape deck insert the cassette, depress the **PAUSE** button and then place the deck as noted in the record mode. The SD 4000 **TAPE/SOURCE MONITOR** Switch should be set to the **SOURCE** position. This technique allows the recording level to be checked and adjusted without actually recording anything on the tape.

Once the levels are set for the loudest portion of the music, leave them where they are. Start the phonograph record over at the beginning and release the **PAUSE** button to commence recording.

If, after setting the recording levels with the above method, the record begins with a soft musical passage, you might suspect from the LED display readings that you set the levels too low. Don't give into the temptation to change them. Bear in mind that the level readings, when placed in proper perspective with actual relative loudness levels, will fall into the following areas:

1. Broadcast human voice: from −10 dB to −5 dB
2. Loud music (fortissimo): approx. +1 dB
3. Soft music (pianissimo): approx. −15 dB
4. Average music level: from −10 dB to −5 dB

NOTE:
Most cassette manufacturers splice a few inches of clear leader tape to the beginning and end of the magnetic recording tape. The leader tape cannot be recorded, and it usually takes about six seconds to pass by the heads when the tape is played from the beginning.

When taking up the slack in the cassette before inserting it for recording, advance the tape so that the spliced area of the tape is ready to pass the recording head (see Figure 1). By knowing exactly where the recordable tape begins, you can assure that the beginning of the program will be recorded.

CLEAN AND DEMAGNETIZED HEADS

The RECORD/PLAYBACK and ERASE heads are the most important parts of the stereo cassette deck. As the tape rubs against the heads during record and playback, brown oxide deposits from the tape accumulate on the heads, guides, and pinch roller. Even the best cassette tapes will shed some particles of oxide. The accumulation of this oxide will cause loss of high frequency response, loss of sound volume, intermittent sound dropout and unsatisfactory results when recording or erasing tape. If your tape deck exhibits any of the preceding symptoms, immediately clean the heads. If the oxide is allowed to build up, it may cause the heads to wear out prematurely, causing permanent damage. Therefore, the heads must be kept clean.

Now, a word about routine preventative maintenance.

Don t put off cleaning the heads simply because the deck is performing well. The experienced audiophile gives the tape path a thorough cleaning at the beginning of every usage as a matter of habit. This is an excellent practice for assuring cleanliness and the best possible recording conditions, and it only requires a minute to do.

To clean the tape path, use cotton swabs and denatured alcohol (available at any pharmacy). Please note that common "rubbing alcohol" should not be used because it has a high water content. Use "DENATURED" alcohol.

Dip the cotton swab in the alcohol and clean the tape heads, capstan, guides, pinch roller—everywhere the tape touches—until no more oxide can be picked up on a fresh cotton swab.

To gain access to the heads for cleaning and demagnetization,

1. Turn off the power.
2. Depress the **STOP/EJECT** button and remove the cassette.
3. With the cassette holder still open, remove the two decorative screws projecting from the front of the cassette lid (see Figure 2). The lid may now easily be removed.
4. Push the **PLAY** button. The heads and pinch roller will protrude into the cassette compartment. The head surfaces may now be inspected.
5. After cleaning and demagnetizing, press the **STOP/EJECT** button twice.
6. To attach the cassette lid onto the cassette holder, align the two holes in the lid with the two special holes in the cassette holder. Secure using the two decorator screws.

The pinch roller in the cassette mechanism provides a simple, visual indication of when to clean the heads. If you can see a stripe of brown oxide around the perimeter of the pinch roller, it is time to clean the entire tape path.

Tape heads and guides also become magnetized after a period of use. When this occurs they cause excessive noise and can even partially erase the tape. The tape heads and guides should be demagnetized periodically (about every nine hours of playing time) with a demagnetizer.

The demagnetizer should be of the same design at those used with 8-track tape cartridge players —that is, the type with a long, slender demagnetizing element bent at an angle near the end.

Instructions are enclosed with the demagnetizer.

CAUTION:
BEFORE USING THE DEMAGNETIZER, TURN OFF THE POWER TO THE TAPE DECK.

TO PROTECT VALUABLE RECORDINGS

In the Record mode, previously recorded information on the tape will automatically be erased.

To protect valuable recordings from accidental erasure, the record capability of either side of a cassette can be defeated. Use a small screwdriver to breakout one or both safety tabs. (Figure 3 shows how to remove the side "A" safety tab.)

The record capability of either side of a cassette can be restored by covering the appropriate opening where the tab was removed with cellophane tape. (Figure 4 shows cellophane tape applied to side "A" safety tab opening.)

DOLBY NR SYSTEM

The Dolby Noise Reduction System increases the level of low volume mid and high frequency signals during recording and reduces the level of these signals by an identical amount during playback. As a result, the playback signal is identical to the original source signal, but the level of background noise generated by the tape and tape recorder is greatly reduced.

The Dolby NR circuitry in your cassette deck can be used to make a Dolbyized recording of a non-Dolbyized source. The Dolby NR circuitry can also be used to record previously Dolby-encoded material (such as a Dolbyized FM broadcast), thereby reducing both FM hiss and tape hiss at the same time.

To record a Dolbyized source onto a cassette the procedure is different. Firstly, the **DOLBY NR** pushswitch is not depressed during recording (as the source is already Dolby-encoded).

A Dolbyized FM broadcast may be recorded directly off-the-air by the following method. First, it will be necessary to alter the de-emphasis, or frequency response, of the tuner or receiver. The FM tuner or receiver you record from must be equipped with a 25-75 microsecond FM de-emphasis switch. Place the switch in the 25 μS position.

NOTE:
In some receivers, this switch may be identified differently. Refer to the receivers owner's manual for proper identifications.

Finally, the **RECORD LEVEL** controls must be properly adjusted to the standard Dolby NR level. The FM station will transmit a special tone at the beginning of a Dolby FM broadcast. The **RECORD LEVEL** controls should be set so that the Peak Level Displays illuminate to the Dolby marking (DD) when this tone is transmitted. When playing back this Dolbyized cassette, the **DOLBY NR** pushswitch should be in the ON (depressed) position to return the frequency response to normal.

MONITORING A DOLBY NR RECORDING

*Model SD 4000 only
The Model SD 4000 utilizes a Double Dolby NR System: a decoder for playback, and an encoder for recording; allowing you to readily check the Dolby effect by monitoring through the Tape Monitor function during recording.

SPECIAL FEATURES

MULTIPLEX FILTER SWITCH

The front panel **MPX FILTER** switch activates a high filter which is specially designed to block the high frequency multiplex pilot and subcarrier signals which are present in stereo FM broadcasts. Although these pilot and subcarrier signals are outside the human hearing range, they can inhibit the action of the noise reduction circuit when making Dolby encoded recordings of standard FM stereo broadcasts.

Normally, it is the job of the tuner or receiver to filter out these undesired signals. Most high quality tuner sections already provide sufficient (40 dB) pilot and subcarrier rejection. In fact, with all Marantz tuners and receivers, use of the **MPX FILTER** is unnecessary. However, to ensure correct operation of the noise reduction circuitry when used with other brands of tuners that may not have sufficient pilot and subcarrier rejection, the **MPX FILTER** is provided.

If you are using a non-Marantz tuner and if the Dolby NR circuit seems to have no effect when recording from FM stereo, then activate the **MPX FILTER**. The filter will then block the high frequency interference and allow the Dolby circuitry to operate as designed.

REC MUTE SWITCH

This switch, when depressed during recording, allows you to cut off the signal without stopping the tape. As a result, a blank recording is made on tape. During the blank recording, the signal can still be monitored through the headphone or the Line Out jacks while observing the **PEAK** LEVEL DISPLAYS.

After recording a program, keep the **REC MUTE** Switch depressed for 3 to 4 seconds to make a blank recording, then depress the **PAUSE** button and release the **REC MUTE** Switch. Release the **PAUSE** button just before the next program is started. In this way, the two programs can be recorded with a blank space between them on the tape. The **REC MUTE** Switch can also be used to make a blank space on tape during phono recording. Depress the Switch when the tone arm stylus is placed on a phono disk or when one program is switched to another. Providing a blank space on the tape can aid tape editing. These blank spaces will also allow the **COMPUSKIP** button to locate the beginning of the recorded program (see COMPUSKIP section on page 12). The **REC MUTE** Switch may also be useful in eliminating unwanted material (commercials, conversations, etc.) from radio broadcasts.

COMPUSKIP SWITCH

When playing back a tape, this switch allows you to automatically locate the beginning of a program, referenced by a recorded blank space.
To operate:
1. Set the **COMPUSKIP** Switch to ON. The Green LED indicator will illuminate, signifying that the Switch is ON.
2. Depress the **PLAY** and **FF/CUE** buttons until locked. The tape runs in Fast/Forward mode. When the tape reaches the beginning of the next recorded program, the **FF/CUE** button is released and program is played automatically.

or

3. Depress the **PLAY** and **REW/REVIEW** buttons until locked. The tape runs in Rewind mode. When the tape reaches the beginning of the program, the **REW/REVIEW** button is released and the program that has just been played will be played again from the beginning automatically.

TOTAL SHUT OFF

The TOTAL SHUT OFF feature will automatically disengage the tape transport when the end of the tape is reached in any transport mode (play, rewind, etc.). The TOTAL SHUT OFF feature will also activate if the tape should jam.

MAINTENANCE

CLEANING

The gold anodized finish of the aluminum front panel and the plexiglas window will last indefinitely with proper care and cleaning. NEVER use scouring pads, steel wool, scouring powders, or harsh chemical agents, such as lye solution. These will mar the finish. Clean with a soft, lint-free cloth or cotton swab slightly dampened with a mild solution of detergent and water.

IN CASE OF DIFFICULTY

If your set is not operating properly, check the following points:

1. Tape not running.
   * Improper connection of power cord.
   * POWER switch in OFF position.
   * Defective cassette.
2. Record button will not go down.
   * No cassette inserted.
   * No erasure prevention tab on cassette.
3. Tape runs but no sound.
   * Tape not recorded.
   * Improper or incorrect connection of amplifier or speaker.
   * Volume control of amplifier is in MIN position.
   * Amplifier select switch not in TAPE position.
4. Distortion in sound.
   * Record level is too high.
5. Wow in sound.
   * Tape head is dirty.
   * Pinch-roller (capstan) is dirty.
   * Defective tape (warped or stretched tape).
   * Tape is not wound neatly or it is wound too tight.
   * Defective cassette with excessive tape drag.
6. Excessive noise.
   * Tape head requires demagnetization.
   * Defective tape.
7. Hum in sound.
   * Improper connection of shielded cable.
   * AC magnetic field from power transformer of external equipment is in close proximity to tape head.

REPAIRS

Only the most competent and qualified service technicians should be allowed to service this Marantz Cassette Deck. The Marantz Company and its factory-trained warranty station personnel have the knowledge and special equipment

needed for repair and calibration of this precision instrument.

In the event of difficulty, refer to the list of Authorized Marantz Service Stations packed with your cassette deck or write directly to the location listed on page 38 for the name and address of the Marantz Authorized Serivice Station nearest your home or business. Please include the model and serial number of your unit together with a full description of what you feel is abnormal in its behavior.

REPACKING FOR SHIPMENT

Should it become necessary to repack your Stereo Cassette Deck for shipment to the factory, to an authorized service station, or elsewhere, please observe the following precautions:

a. Do not ship the unit installed in its accessory walnut cabinet: remove the unit from the cabinet before packing.
b. Pack the unit carefully, using the original material as shown in Figure 5.
c. Ship via a reputable carrier (do not use Parcel Post) and obtain a shipping receipt from the carrier.
d. Insure the unit for its full value.
e. Be sure to include your return address on the shipping label.

INTRODUCTION

Pour obtenir les meilleures performances et la plus grande satisfaction de votre lecteur de cassettes stéréo, modèle SD 3000 ou SD 4000 veuillez étudier avec soin les instructions suivantes. L'installation et le fonctionnement des modèles SD 3000 et SD 4000 ne sont pas compliqués, mais la souplesse d'utilisation permise grâce aux multiples perfectionnements mérite votre attention en égard à ces nombreux contrôles et raccordements. Nous vous recommandons la procédure suivante qui garantit les superbes performances du modèle SD 3000 ou SD 4000.

A des fins de simplification, ce manuel est divisé en deux parties. La première présente une description simplifiée du fonctionnement de l'appareil. Un explication synoptique ainsi que des spécifications techniques détaillées sont données dans la deuxième partie.

Pour permettre une identification rapide des nombreux contrôles, raccordements et réglages relatifs au modèles SD 3000 et SD 4000, toutes les références y afférentes reprises dans ce manuel sont imprimées en majuscules **GRASSES.**

Ce manuel universel a été conçu pour présenter des instructions en anglais, français et allemand, applicables à toutes les versions de cet appareil Marantz vendues dans le monde entier. Ce produit Marantz a été spécialement préparé afin de satisfaire aux exigences d'alimentation-secteur et de sécurité en vigueur dans votre région. Veuillez vérifier le suffixe alphabétique du numéro de série de votre appareil Marantz. Notez sur le tableau qui suit, les différences pouvant exister entre votre appareil et celui décrit ici.

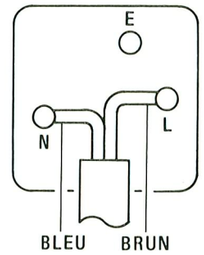
A — Alimentation 240 V AC.
C — Alimentation 120 V AC.
E, N — Alimentation 220 V AC. Une borne de masse est fournie pour être raccordée à une prise de terre authentifiée.
(Cet appareil peut être converti en 110-120/220-240 V AC — 50/60 Hz par un technicien qualifié.)
P — Alimentation 120 V.

S'il était nécessaire de convertir cet appareil pour un fonctionnement sur une autre tension, veuillez noter que l'on devrait alors remplacer le fusible par un autre présentant les caractéristiques adéquates.

CONCERNANT LES APPAREILS VENDUS AU ROYAUME UNI

IMPORTANT
Les fils du câble d'alimentation sont colorés suivant le code suivant:

Bleu : Neutre
Brun : Conducteur



Etant donné que la couleur de ces fils ne correspond pas nécessairement avec le code de la fiche que vous utilisez, procédez comme suit:

Connectez le fil brun au terminal marqué "L" ou de couleur brune ou rouge.
Connectez le fil brun au terminal marqué "N" ou de couleur bleue ou noire.
Pour des fiches de 13 A, conformes au standard BS 1363, utilisez un fusible de 3 A.
Pour les autres prises, utilisez un fusible de 5 A ou moins à raccorder à la fiche à l'adaptateur ou au tableau de distribution.

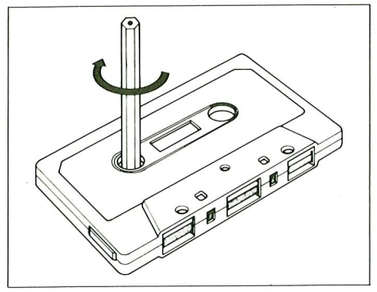


Figure 1. Cassette Preparation
Figure 1. Préparation de la Cassette
Abbildung 1. Cassettenvorbereitung

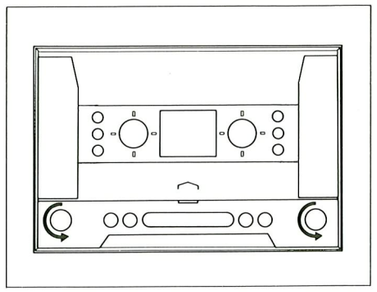


Figure 2. Removing the Lid
Figure 2. Pour enlever le couvercle
Abbildung 2. Entfernen des Deckels

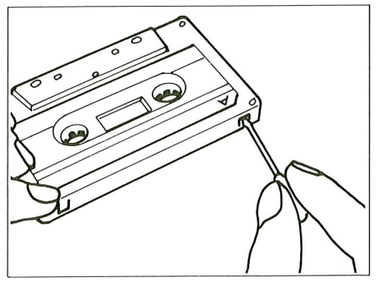


Figure 3.
Abbildung 3.

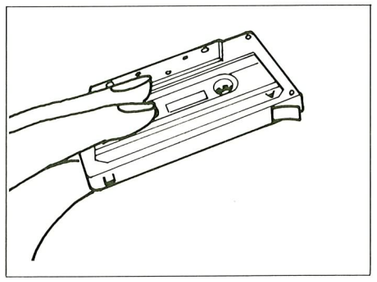


Figure 4.
Abbildung 4.

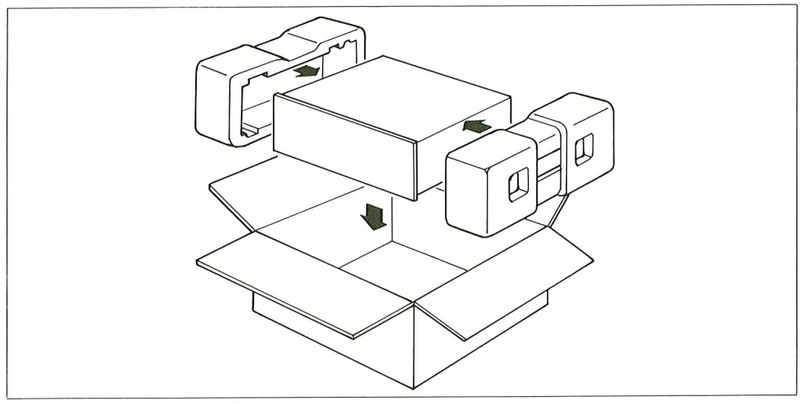
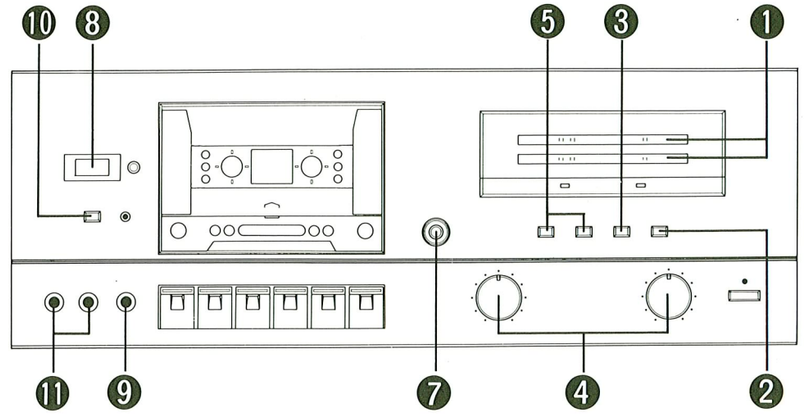


Figure 5. Packing Instructions
Figure 5. Instructions d'emballage
Abbildung 5. Packungsanleitung

MODEL SD 3000



MODEL SD 4000