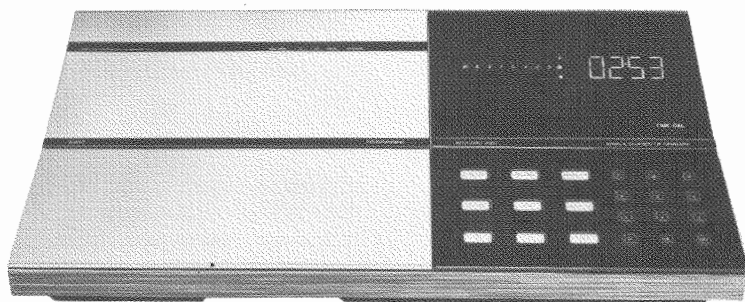


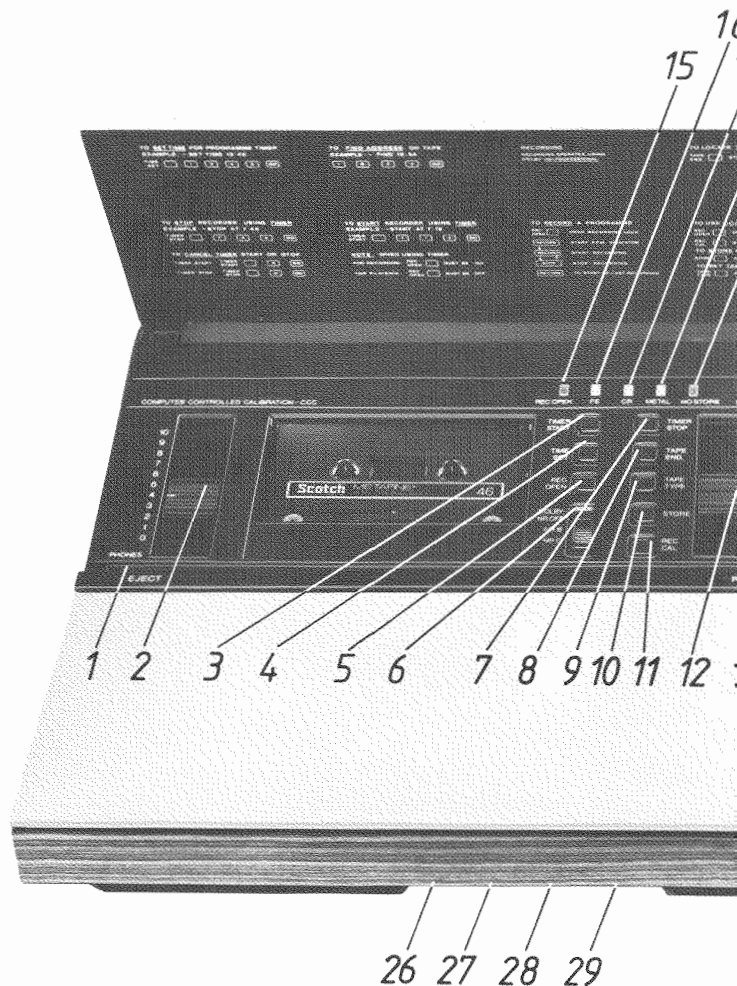
BANG & OLUFSEN

BEOCORD 9000



Contents

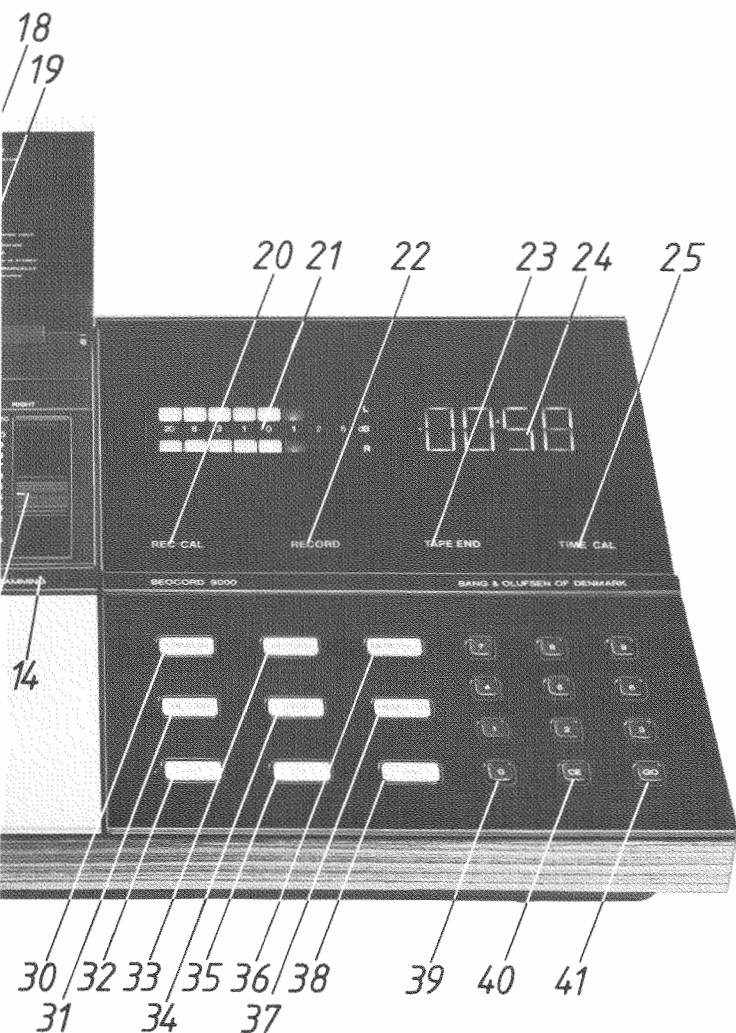
Key illustration	2
Everyday operation	4
Tape playback	4
Time calibration	4
Dolby noise reduction	7
Recording	7
HX Professional	9
Tape end	10
Timer programming	11
Remote control	12
Microphone	12
AUX	12
Setting up	12
Maintenance	15
Technical specifications	17



1. EJECT, opening the cassette holder.
2. Headphone volume control.
3. TIMER START, programming start time.
4. TIME SET, presetting the clock.
5. REC OPEN, ready to record.
6. Dolby NR switch.
7. TIMER STOP, programming stop time.
8. TAPE END, countdown of tape time remaining.
9. TAPE TYPE, manual tape type selection.

10. STORE, tape type memory.
11. REC CAL, recording calibration.
12. Recording level, left channel.
13. Recording level, right channel.
14. PROGRAMMING, opening the cover.
15. Indicator, REC OPEN.

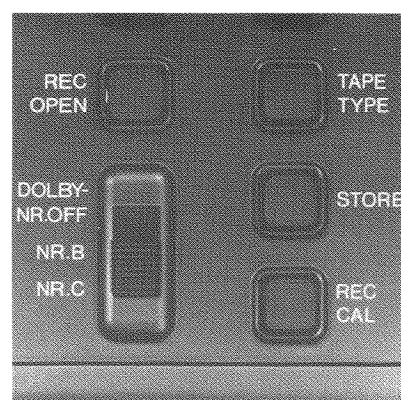
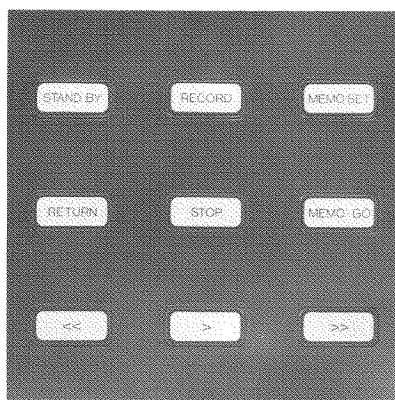
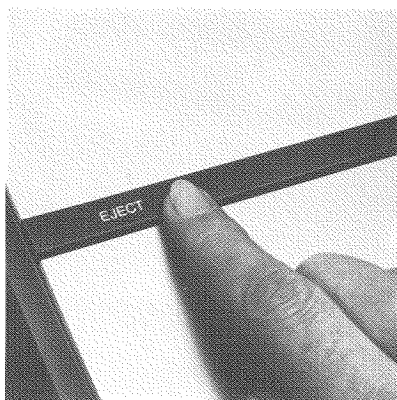
16. Indicator, ferric tape.
17. Indicator, chrome tape.
18. Indicator, metal tape.
19. Indicator, tape type memory.
20. Indicator, REC CAL.
21. Peak Programme Meter, recording level indicator.



22. Indicator, RECORD.
 23. Indicator, TAPE END.
 24. Tape time calibration and clock.
 25. Indicator, TIME CAL.
 26. Microphone jack socket.
 27. AUX and MIC DIN socket.

28. Radio/amplifier switch, microphone or auxiliary.
 29. Headphone socket.
 30. STAND BY switch.
 31. RETURN, erasure of recording or playback in progress.

32. <<, rewind.
 33. RECORD, recording button.
 34. STOP.
 35. >, playback.
 36. MEMO SET, memorizing tape position
 37. MEMO GO, winding to memorized tape position.
 38. >>, fast forward.
 39. Programming keyboard, 0 to 9.
 40. CE, programme cancellation.
 41. GO, conclusion of programming.



EVERYDAY OPERATION

Tape Playback

Press **[EJECT]**, insert a recorded tape in the Beocord 9000 and press **[>]**.

Set the Dolby NR switch to NR C (or NR B if the tape has been recorded with Dolby NR B on another tape recorder).

- 4 Stop, press **[STOP]**.
Fast forward, press **[>>]**.
Rewind, press **[<<]**.
Return to the tape position on the cassette when inserted, press **[MEMO GO]**.
Return to the tape position at which playback last started, press **[RETURN]**.

Playback with time calibration

Actual playing time in minutes and seconds from the beginning of the tape:
Press **[0]** and **[GO]**.

Actual playing time from the tape position on cassette insertion:
Press **[GO]**.

Automatic search

For example, 3 minutes and 30 seconds from the beginning of the tape:
Press **[3][3][0]** and **[GO]**.

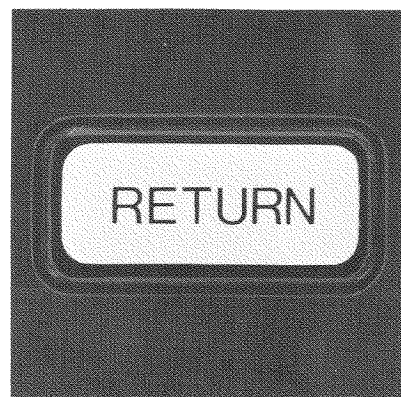
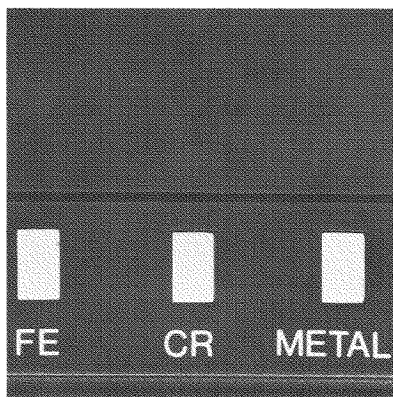
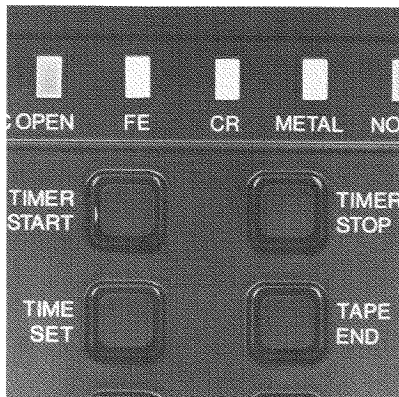
Recording

Insert cassette and press **[REC OPEN]** and **[REC CAL]**.

Set the Dolby switch to NR C.
Select your programme on the radio receiver, press **[RECORD]** and adjust the two REC sliding controls LEFT and RIGHT until the red 1 dB indicator panels flash during loud passages.
To start recording, press **[RECORD]**.
Stop with 4 second interval, press **[STOP]**.
Stop with no interval, press **[STOP]** **[STOP]**.
Stop and rewind to the starting point for the recording, press **[RETURN]**.
Resume recording, press **[RECORD]**.

Recording with countdown of tape time remaining

Press **[REC OPEN]** and **[TAPE END]**.



Timer programming

To start recording at e.g. 13.00:

Press **REC OPEN** **TIMER START**

1 **3** **0** **0** **GO** and **STAND BY**.

To stop playback or recording at e.g. 14.00:

Press **TIMER STOP** **1** **4** **0** **0** **GO** and **STAND BY**.

TAPE PLAYBACK

Press **EJECT**. The large metal cover and the cassette holder open; insert a cassette and press down the holder. The Beocord 9000 adjusts automatically to the type of tape – ferric, chrome or metal.

Correct playback of ferrochrom can be obtained by pushing tape type until the indicators FE and CR light.

Ensure that the radio or amplifier connected is switched to TAPE function (in the case of the Beomaster 8000 or 6000, to TAPE 1).

Start playback, press **>**.

Pause or stop

Press **STOP**.

Resume playback, press **>**.

Fast forward winding

Press **>>**.

Stop, press **STOP**.

Rewind

Press **<<**.

Stop, press **STOP**.

Arbitrary sequence

>>, **<<** and **>** can be used in any order, without using **STOP** in between.

Display panel

These functions are indicated on the large display as follows:

> and **STOP**: The first digit switches to **□** and **□**, the digits that follow represent minutes and seconds.

>>, **□□□□** flashes.

<<, **□□□□** flashes.

During fast forward winding and rewinding the minutes and seconds readout disappears and when the tape stops or you press **>**, 00.00 is re-set to correspond to this tape position.

Relative time indication

After approximately 2 minutes of playing time the display panel switches to a 4 digit reading in minutes and seconds, also during fast forward wind and rewind. 00.00 corresponds to the tape position at which playback was last started with **>**.

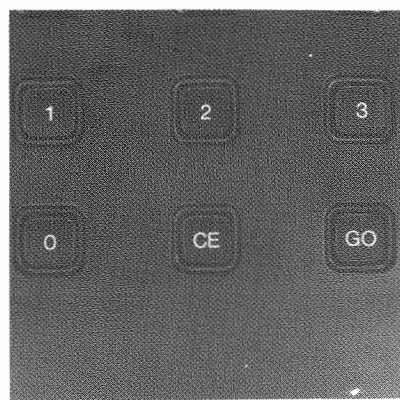
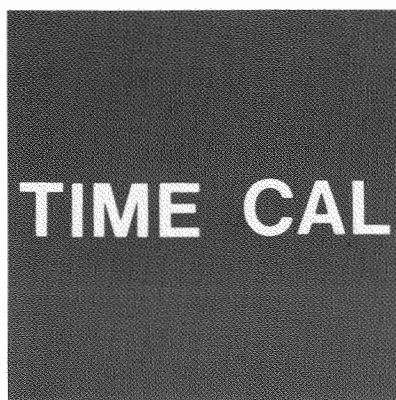
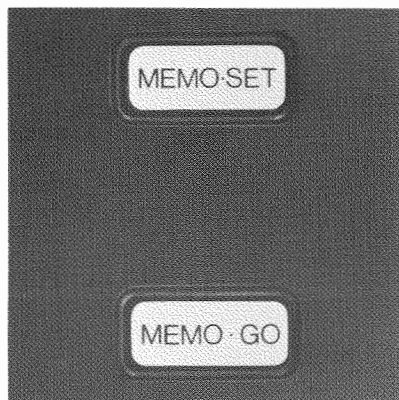
Rewinding below 00.00 gives a reverse count, indicated by a dot (minus) in front of the first digit.

If you require precise time measurement, read the section on TIME CALIBRATION.

Return

With the **RETURN** button you can replay the tape from where playback was last started.

The Beocord 9000 automatically rewinds to approximately 6 seconds before the starting point, winds silently to that point and repeats playback.



Memory

MEMO SET makes it possible for a tape position of your choice to be memorized. You can then play back the tape or wind or rewind, and when you want playback to start at the chosen tape position, press **MEMO GO**.

The tape is automatically wound to the place and playback starts.

To stop at the chosen position, keep **MEMO GO** pressed down for at least 2 seconds, until ☐ is indicated by the first digit.

Pressing **MEMO SET** at another tape position cancels the first memory.

MEMO GO can be used without pressing **MEMO SET**.

In this case the tape position memorized is the one at which the cassette was inserted.

MEMO SET is cancelled when you remove the cassette.

Automatic stop

When the tape in a cassette runs out, playback stops automatically. The same is true with fast forward and rewind.

Stand by

When not in use, the Beocord 9000 may be switched off by pressing **STAND BY**.

Automatic stand by

The Beocord 9000 switches off automatically when half an hour has elapsed since a cassette finished or the cassette recorder was in operation.

TIME CALIBRATION

Most tape recorders have a tape counter which gives a multi-digit reading which has no direct relation to real time.

The Beocord 9000 has a tape position indicator which shows tape playback time in minutes and seconds. This allows you to note actual playing times for cassettes. There are differences between tapes, and tape thickness, for example, affects the calibration. The time calibration is based on cassettes with the following tape thickness: C60 18 μm , C90 12 μm and C120 9 μm . Therefore the Beocord 9000 measures the inserted tape automatically before indicating the correct reading on the display. However, there is no need to wait while this calibration takes place. For example, suppose you wish to hear a tape from the beginning:

Press **0** and **GO**.

The Beocord 9000 rewinds to the beginning and playback starts, while **TIME CAL** flashes and the first digit

switches between ☐ and ☐. After approximately 1½ minutes the tape is calibrated and **TIME CAL** lights continuously.

Automatic playback from the tape position of the cassette when inserted

To start playback at the place to which the cassette was wound on insertion, simply press **GO**. The Beocord 9000 rewinds and calibrates the tape. When **TIME CAL** lights continuously, the tape is automatically wound to the right place and playback begins.

Automatic search

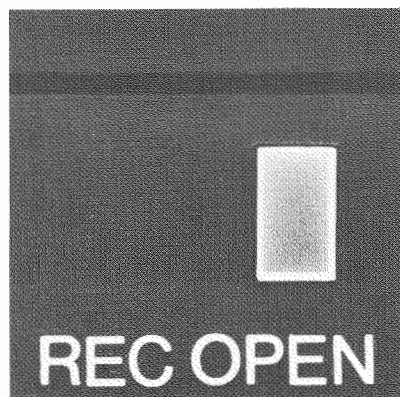
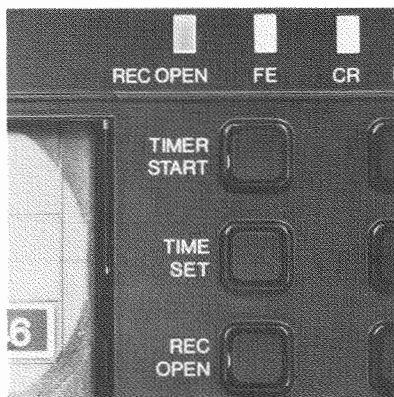
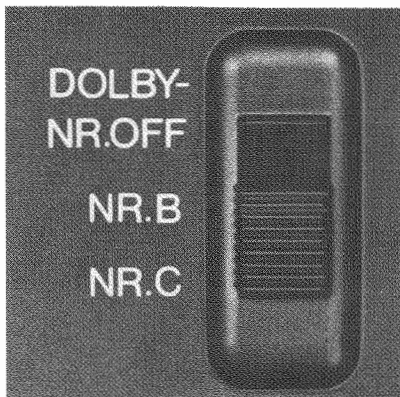
Suppose we want to find a certain recording which starts 3 minutes and 30 seconds from the beginning of the tape:

Press **3** **3** **0** and **GO**.

The Beocord 9000 automatically winds to a point 8 seconds before the place we want. It then starts to play the tape back silently until it finds a recording pause at which point it switches on the volume.

If there is no pause in the recording it switches on the volume at the time chosen.

If the tape is already calibrated the automatic search is direct and therefore quicker.



Automatic search and stop

If you wish the tape to stop at the place you want to find, keep **[GO]** pressed down for at least 2 seconds, until **[]** is indicated by the first digit.

Indication Error

With some makes of tape, time indication errors may occur due to variations in tape tension between fast-winding and normal tape motion. At the end of a C 90 cassette, for example, a difference of up to 20 seconds may be observed, corresponding to an error factor of 0.74%.

Cancellation

If you have keyed in the wrong digits, press **[CE]**, followed by the right digits and **[GO]**.

Time calibration is cancelled when you remove the cassette by pressing **[EJECT]**.

Operating error

The Beocord 9000 is secured against following wrong instructions. If you press a button at the wrong time, when the relevant function cannot or must not be carried out, **[]** appears on the screen but otherwise nothing happens.

DOLBY® NOISE REDUCTION SYSTEM

The Beocord 9000 incorporates a new noise reduction system, Dolby NR C. This is a refinement of the Dolby NR B system, which under the name Dolby NR has been used in cassette recorders for a number of years. Dolby NR C provides significantly greater noise reduction, up to 20 dB, as compared to max. 10 dB for Dolby NR B. The Beocord 9000 has both Dolby NR C and Dolby NR B, which means that tapes are interchangeable as regards other tape recorders with Dolby NR B. Dolby noise reduction is a system for reducing tape-hiss. It works on the basis that hiss has a sound characteristic which makes it most annoying in the playback of quiet treble notes and during pauses.

The system operates by boosting the quiet treble notes during recording and lowering them correspondingly in playback, lowering the level of audible tape-hiss at the same time. The result is sound reproduction with a lower noise content.

Set the switch to Dolby NR C for cassettes which are to be recorded and played back on the Beocord 9000.

Use Dolby NR B when recording tapes which you also wish to be able to play back on other cassette recorders; and when playing back tapes recorded with Dolby NR B on another cassette recorder.

RECORDING

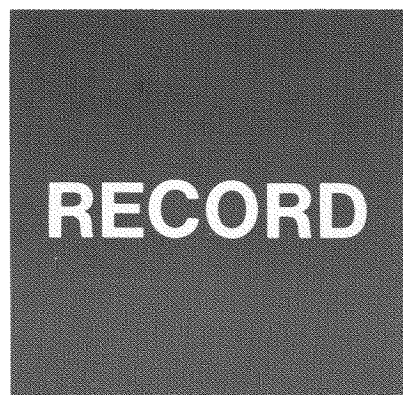
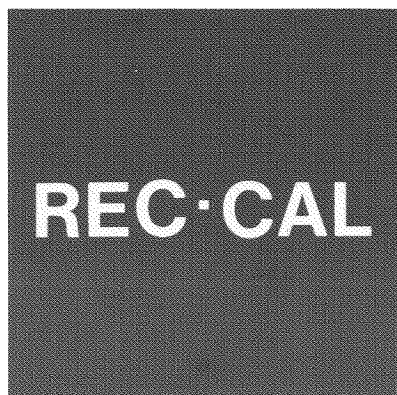
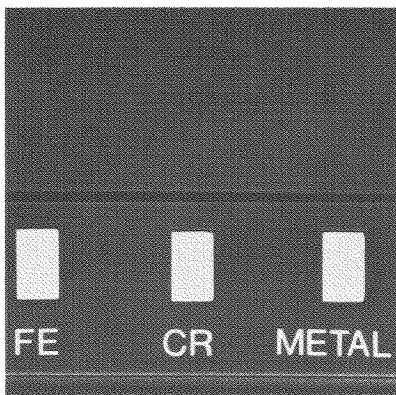
When you insert a cassette in the holder you cannot record straight away; you have to press **[REC OPEN]** first.

This is a precaution against your recording on the tape by accident, inadvertently erasing previous recordings.

The REC OPEN indicator lights up when the Beocord 9000 is ready to record. The function is cancelled by pressing **[REC OPEN]** again.

If the cassette is secured against recording – the tabs on the rear edge removed – REC OPEN does not light up and the display flashes **[]** to indicate that you cannot record on this particular cassette.

*Trademark of Dolby Laboratories Licensing Corporation.
Noise reduction system manufactured under License from Dolby Laboratories Licensing Corporation.



Tape type

The Beocord 9000 automatically adjusts to the tape type – ferric, chrome or metal – when a cassette is inserted, and the appropriate indicator lights up. At present, ferrochrome cassettes do not have the holes in the rear edge which are required for automatic adjustment, so you have to press **TAPE TYPE** until both FERRO and CHROM indicators are lit. Metal tape cassettes which lack the standard holes are indicated by CHROM lighting up. Press **TAPE TYPE** until the METAL indicator lights. Or better still, use the recording calibration function.

Recording calibration

Different tapes have different performance characteristics and you only get the best performance out of a given tape when you allow the Beocord 9000 to calibrate its recording characteristics.

After pressing **REC OPEN**, press **REC CAL**.

Within about 10 seconds the Beocord 9000 calibrates the tape's characteristics and adjusts its own recording functions accordingly, so as to optimize performance. Bias, equalization and sensitivity are optimized, as is recording level via the Peak Program Meter readout. The REC CAL indicator flashes while these adjustments are being made and lights uninterruptedly when they are completed.

Recording-pause and recording start

The RECORD indicator has two functions:

- Flashing light, indicating that the Beocord 9000 is on recording-pause. This function is intended for making final recording adjustments. If you have just carried out a recording calibration and the tape stops at a tape position where there is a pause, then the Beocord 9000 is automatically in the recording-pause mode.

If, on the other hand, there is no pause at this tape position but a previous recording instead, press **RECORD** once to set the Beocord 9000 on recording-pause.

Select programme on radio receiver. Select noise reduction system with the Dolby NR switch.

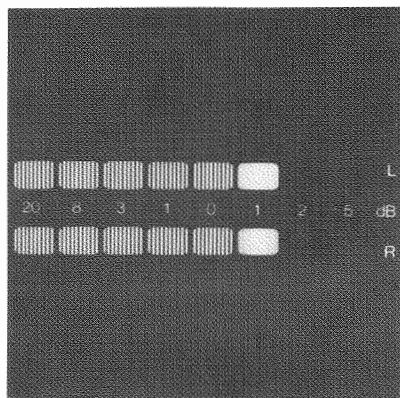
Adjust the two slider controls REC LEFT and RIGHT while reading off the two Peak Program Meters.

When you are ready to record, press **RECORD**.

- RECORD lights continuously, indicating that recording is in progress.

Peak Program Meter, PPM

Recording level indication is via two peak meters, one for each channel. When recording, adjust the REC sliders so that the first red indicator panel, +1 dB, flashes during the loudest sound passages. This corresponds to a 2–3% distortion level when you have optimized the recording level characteristics, by using REC CAL before starting to record.



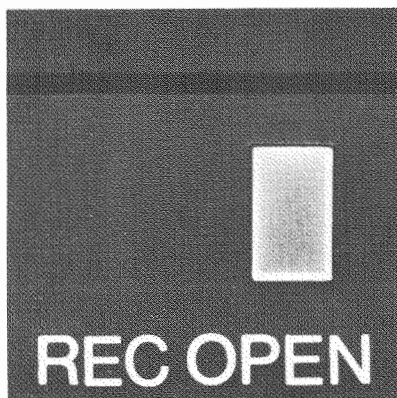
This applies to all three Dolby NR switch positions, meter readings being automatically adjusted. The PPM also operates during playback, where you can get two different readings:

- With REC OPEN activated, e.g. after recording a tape with REC CAL in operation. PPM readings will be slightly lower during playback than in recording.

- Without REC OPEN, indicator light off. In this case the Beocord 9000 is adjusted to a norm tape and for the majority of tapes this gives higher readings than in recording. This gives you a more realistic impression of how powerfully the given tape has been recorded on the Beocord 9000.

HX PROFESSIONAL

The Beocord 9000 is designed with the HX Professional recording system, which makes better use of the tape's dynamic range.



Music with a large treble content can be recorded more powerfully before distortion sets in, which corresponds to using a better quality, more expensive tape. With HX Professional, ferric and chrome tapes can attain a signal loading capacity which approaches that of metal tape. The recording of lower notes is purer too, because the effect of simultaneous loud notes is eliminated. The system requires no manual operation; it is in continual operation during recording. Tapes recorded on the Beocord 9000 can be played back with the same improved sound quality on other tape recorders. HX Professional has been developed by Bang & Olufsen in co-operation with Dolby Laboratories.

Stop or pause

Press **[STOP]**.

The tape does not stop immediately. A 4 second interval is introduced automatically to ensure a short pause between recordings.



Extended recording-pause

You can extend the 4 second interval for as long as you wish by keeping **[STOP]** pressed down.

Instantaneous stop

To stop the recording, without introducing the 4 second interval, press **[STOP]** twice.

Resume recording

Press **[RECORD]**.

RETURN function

If you decide that you do not wish to record the programme you have begun, press **[RETURN]**. Recording stops and the tape rewinds to the beginning of the recording. If this is at a recording-pause, you can start recording again by pressing **[RECORD]**.

If there is no recording-pause, the Beocord 9000 stops, i.e. it is not in recording-pause.

You can also use the RETURN function after pressing **[STOP]**.