BANG & OLUFSEN

BEOCORD 8004

HOW TO OPERATE BEOCORD 8004

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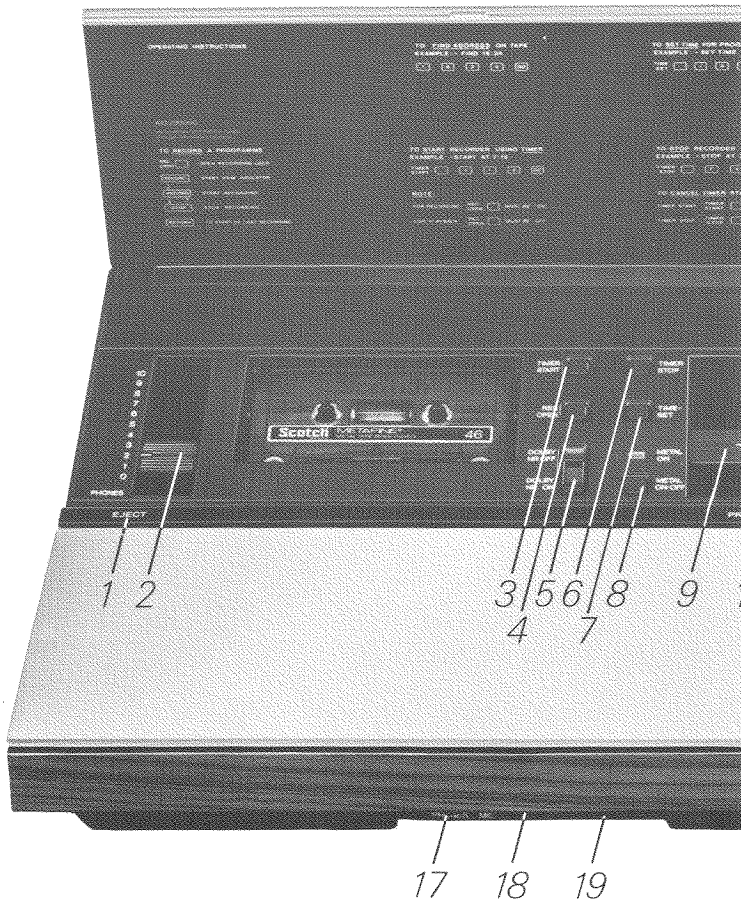
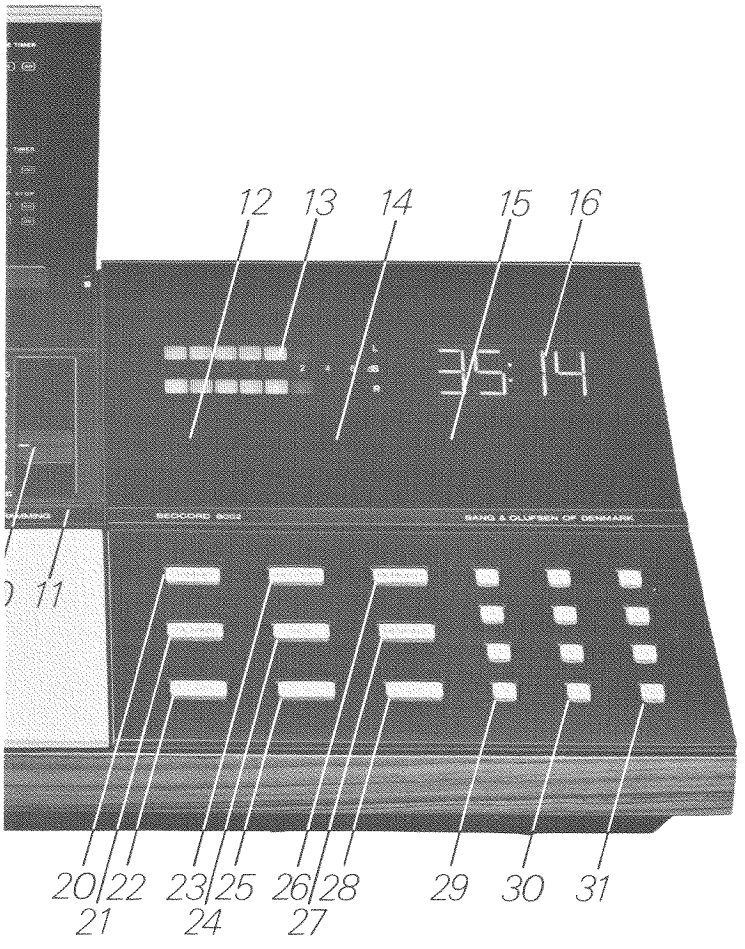
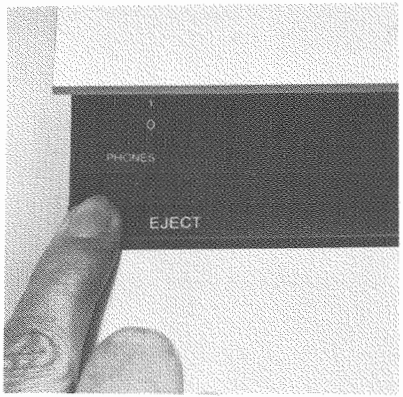
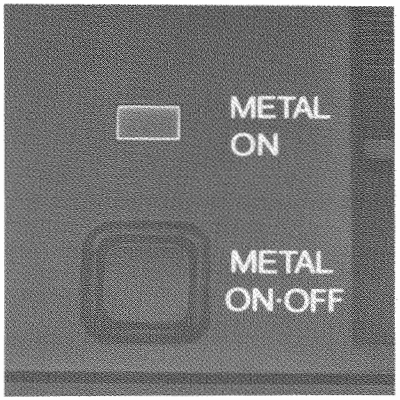


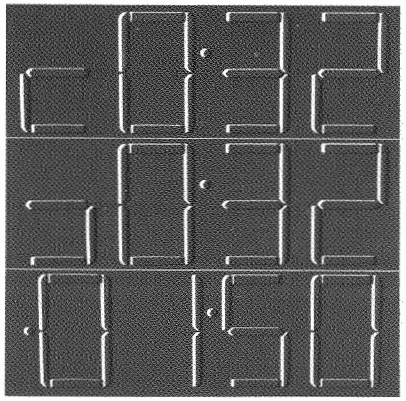
1. EJECT, opening the cassette holder
2. Headphone volume control
3. TIMER START, programming the tape start-time
4. REC OPEN, ready-to-record
5. DOLBY NR switch
6. TIMER STOP, programming the tape stop-time
7. TIME SET, presetting the clock
8. MP, metal tape
9. Recording level, left channel
10. Recording level, right channel
11. PROGRAMMING, opening the holder panel
12. Light indicator REC OPEN
13. Peak Programme Meter, drive indicator
14. Light indicator RECORD
15. Light indicator MEMORY
16. Tape position indicator and timer
17. Headphone socket



18. Microphone and auxiliary socket
19. Selector switch: radio/amplifier; mic. or aux.
20. STAND-BY switch
21. RETURN, erasure of already begun recordings
22. Rewind
23. RECORD, recording pushbutton
24. STOP
25. Forward
26. MEMORY+, activation of the memory function
27. MEMORY−, deactivation of the memory function
28. Fast forward
29. Programming 0 to 9
30. CE, programme cancellation
31. GO, end of instruction.







TAPE PLAYBACK
Place the connected radio or amplifier in the TAPE mode.
Pressing EJECT will cause both the large metal cover and the cassette holder to open. Insert the tape cassette into the holder and press down.
Tape type adjustment for ferro, chrome or metal tape is automatic.

Metal
If the rear edge of the cassette does not have holes for metal, the indicator light MP ON will not light automatically. Press METAL ON-OFF.

Start playback
Press ▷.

Pause or stop
Press the STOP pushbutton.
Playback will recommence from the same position on the tape when ▷ is pressed anew.

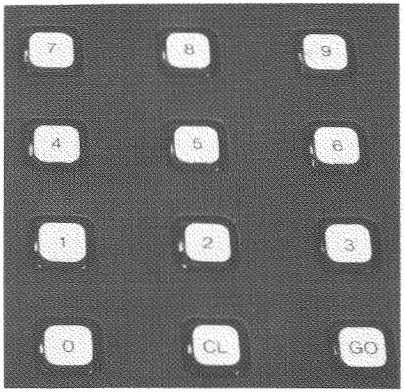
Automatic stop
The tape will stop automatically at the conclusion of playback; this also holds true for forward- and rewind.

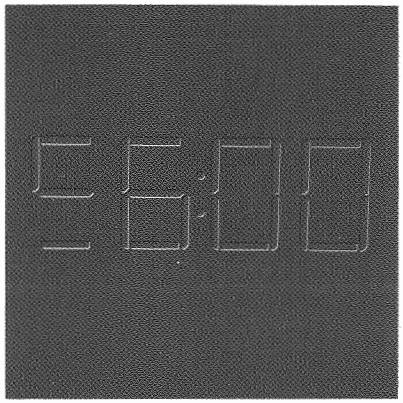
Forward wind
Press ▷▷.
Stop: press STOP.

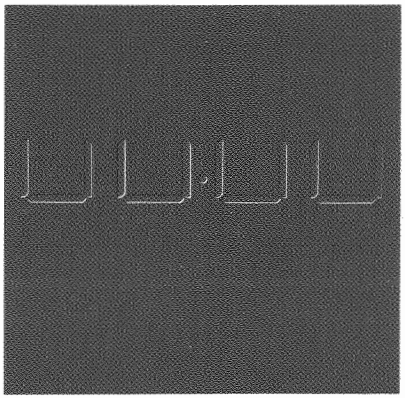
Rewind
Press ◁◁.
Stop: press STOP.

Pushbuttons ▷▷, ◁◁ and ▷ may be pressed in arbitrary sequence and without the need for pressing STOP within the sequence.

PLAYING TIME
Most tape recorders incorporate a tape position indicator that displays an arbitrary multi-digit number – a number that has no direct relation to real time.
Beocord 8004 features a tape position indicator that displays tape playback time in minutes and seconds. This allows you to note the virtual playback time of your cassettes.
The position indicator will begin automatically at 0·00 when a tape cassette is inserted – regardless of how large a portion of the tape has been wound. As long as the first digit flashes, – as shown in the photo – forward wind and rewind will shift 0·00 to that tape position corresponding to where/when you have pressed the STOP pushbutton.
This means that you can – during the interval of the first few (max. 3 minutes) moments – shift 0·00 tape reeling.
As soon as you have read-out 4 digits, say, 00·50, the counter will lock and an eventual rewind to below position 00·00 will reverse the counter and cause it to run in reverse – much the same as a thermometer that shows a temperature below the freezing point. A point will appear before the number when this occurs – as shown in the photo.







Actual playback time
To achieve maximum utilization of the tape position indicator, time should be measured from the very beginning of the cassette tape.
The time calibration is based on cassettes with the following tape thickness:
C 60 18 μm, C 90 12 μm and C 120 9 μm.
When the Beocord 8004 indicates virtual tape time, a precondition is that the recorder must first itself be cognizent of what tape has been inserted – for example, C60 or C90.
For this reason the tape will wind forward/reverse several times, automatically. When the correct position is found, two dots (:) will appear midway between the second and third of the four digits.
Two different procedures may be utilized, namely:

Automatic playback from tape beginning
Press [0] and [GO].

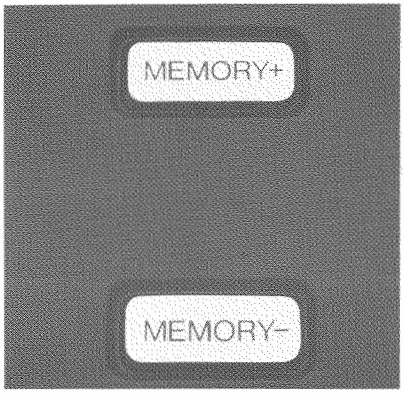
Automatic playback from the tape position when cassette was inserted
Press [GO].
Elapsed time is measured from the beginning of the tape.
The tape will automatically reel to that tape position where the cassette was inserted, playback will then commence.

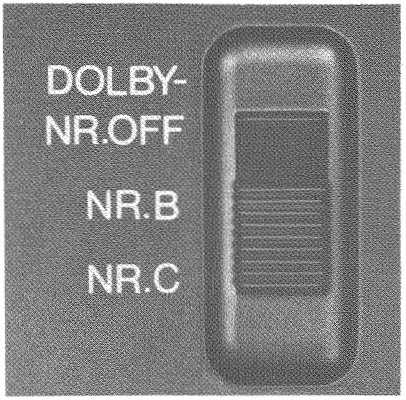
AUTOMATIC SEARCH
If – as an example – a particular recording is begun 3 minutes and 30 seconds from the beginning of the tape:
Press [3] [3] [0] and [GO].
The Beocord 8004 will automatically wind to the position desired and then begin playback. Playback will begin 8 seconds before the selected time to ensure that the full recording is reproduced.
If, however, you should wish to stop the tape after 3 minutes and 30 seconds, hold down the [GO] pushbutton for at least 2 seconds, i.e.
– until the first digits display the pattern shown in this photo.

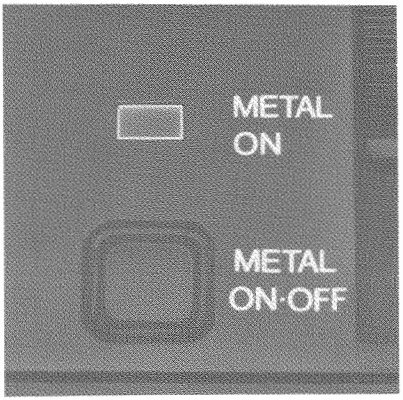
Incorrect operation
If you press the wrong control and instruct the Beocord 8004 to do something impossible, the pattern shown in this photo will appear.

Cancellation
If you have keyed-in the wrong digit(s), press [CE].

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 C90 cassette, for example, a difference of up to 20 seconds may be observed, corresponding to an error factor of 0.74%.







MEMORY

MEMORY+ allows you to introduce a stop point which will function when you actuate >> or <<, but not the > pushbutton.

If, for instance, you have wound to the beginning of a selection of music – a selection you wish to find again in the future:

Press MEMORY+.

A light indicator will flash "MEMORY", when you reel either towards, or away from the memory tape position and when the reeling ceases at the desired position.

"MEMORY" will light without interruption in other recorder functions.

Stop-position may be shifted by simply pressing MEMORY+ anew.

MEMORY is cancelled by pressing MEMORY–.

DOLBY* NOISE REDUCTION SYSTEM

The Beocord 8004 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.

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

Dolby NR C provides significantly greater noise reduction, up to 20 dB, as compared to max. 10 dB for Dolby NR B. The Beocord 8004 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 8004.

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.

Removing a tape cassette

Press EJECT, regardless of what particular function the Beocord 8004 happens to be operating in.

RECORDING

Insert a cassette into the cassette holder and press REC. OPEN.

This pushbutton is your assurance that you do not unintentionally record on a tape and thus erase selections recorded earlier.

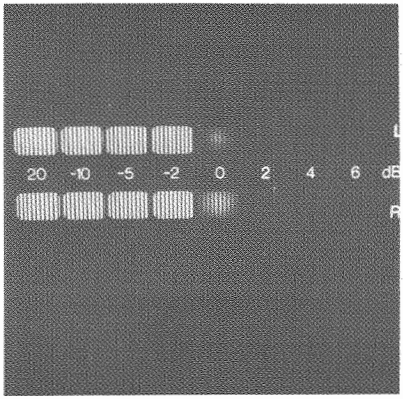
A light indicator will show REC. OPEN and if the tape cassette is itself secured against recording – the tabs at the rear of the cassette have been removed – the position indicator will flicker three times (the pattern shown in the photo) to inform you that recording onto this particular cassette can not take place. This function will be cancelled if REC. OPEN is pressed.

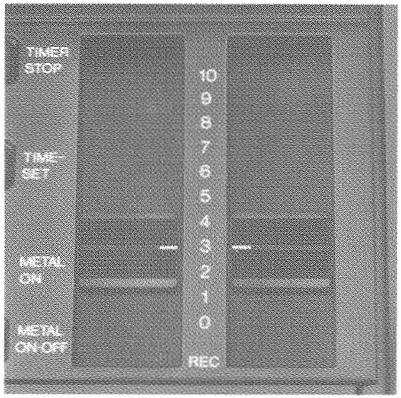
Tape type

Tape type adjustment for ferric, chrome or metal tape takes place automatically when you insert the cassette. With metal tape the METAL ON indicator lights up. If the rear edge of the cassette does not have holes for metal, press METAL ON-OFF. The Beocord 8004 is adjusted to the following tape types:

Ferric: IEC standard, e.g. BASF LH1
Chrome: TDK-SA.
Metal: Scotch Metafine.

Other makes of good quality tape can be used without affecting reproduction significantly.





Improved recording dynamics
The Beocord 8004 employs the Dolby HX Professional recording system, developed jointly by Bang & Olufsen and Dolby Laboratories.
This system allows us to make better use of the dynamic range of each tape. So that by recording with the Beocord, your ferric tapes, whether new or old, can sound like chrome tapes.
Music with a lot of high notes can be recorded at higher levels before distortion occurs. With ferric and chrome tapes you get a signal content which approaches that of metal tape. Also the recording of low notes is clearer, because the side effects of simultaneous loud high notes are eliminated.
The system operates continuously during recording; it requires no manual control.
Tapes recorded on the Beocord 8004 have the same improved sound quality when played back on other cassette recorders – clearer, truer reproduction of all frequencies, and better dynamics.

Preparing to record
Choose programme on radio or amplifier. Press RECORD. The Beocord is now in recording-pause position, indicated by RECORD light flashing.

Peak Programme Meter
Now you can adjust the recording volume with reference to the PPM reading. Move the two REC slider controls until the loud music passages give a PPM reading 0 – +2 dB. This applies to all types of tape, with or without DOLBY NR.
The PPM is designed to take into account the tape's signal receptivity, particularly in the treble range.
You get the full benefit of Dolby NR with music passages which give PPM readings below –20 dB. If the music is continuously in the +2 to –20 dB range then Dolby NR remains inoperative.

Recording start
When you are ready to record, press RECORD again.
The RECORD indicator now lights steadily, indicating that recording is in progress.

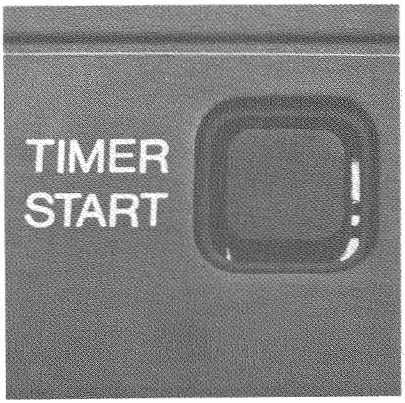
Stop or pause
Press STOP.
The tape will not halt instantaneously: A pause of approx. 4 seconds is automatically introduced to ensure a brief interval between recordings.

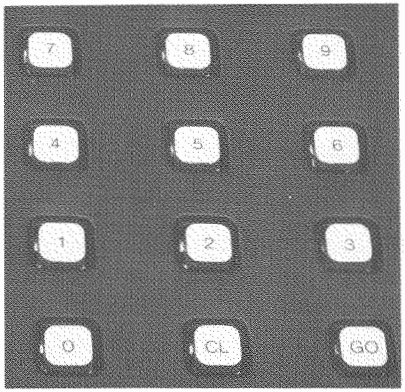
Extended recording pause
The 4-second pause between two recorded selections may be extended by merely holding down STOP when you go from recording to pause.

Continued operation
Recording continues or starts again if the RECORD pushbutton is pressed.

Automatic "regret" function
If you should change your mind and no longer wish to record the programme you have begun, then press RETURN. Recording will stop and the tape will reel back to the starting point corresponding to that before recording began (the previous recording pause).
RETURN function – rewind to the preceding recording pause – may also be employed after the STOP pushbutton has been used.

HEADPHONES
Stereo headphones may be connected to the PHONES socket on the front panel edge of the tape recorder.
Adjust volume level with the separate PHONES slider control, found under the metal panel lid.
Headphones may be used during recording as well as during playback.





TIMER PROGRAMMING

Programming for tape playback

If – for instance – you wish to listen to a tape at 12.30 hours: Reel the tape to the desired programme selection position.

Caution: the REC. OPEN light indicator must **not** show light. If it does, press REC. OPEN followed by TIMER START, 1 2 3 0 GO.

The tape position indicator shows the desired time and will then return to display playing time.

Press STAND BY.

Programming for unattended recording

If – as an example – you wish to record a radio broadcast at 13.00 hours:

Wind the tape to the point at which the recording is to be stored. Check that REC. OPEN indicator is lit; press REC. OPEN if required.

Tune in the radio receiver to the desired programme and adjust the RECORD slider control to that level you use to record radio programmes.

Now press TIMER START, 1 3 0 0 GO.

The tape position indicator will now show the desired hour and will then return to display playing time.

Press STAND BY.

Programming for stop

If – for example – you wish the Beocord 8004 to go to stand by at 14.00 hours: Whether the tape recorder is in the process of recording or playback at that particular time, has no bearing. Press TIMER STOP, 1 4 0 0 GO.

Check

You may at any arbitrary point in time check the programme status of the Beocord 8004:

Press TIMER START. The first digits should flash.

Press TIMER STOP. The last digits should flash.

Cancelling

If you do not wish to make use of an existing programme you may cancel it in the following manner:

Press TIMER START, 0, GO, or TIMER STOP, 0, GO.

STAND BY

When not in use, the Beocord 8004 may be turned off by pressing STAND BY.

Automatic stand by

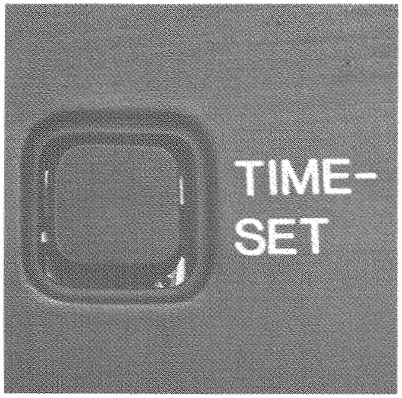
Beocord 8004 will go to stand by automatically, ½ hour after the conclusion of a tape cassette.

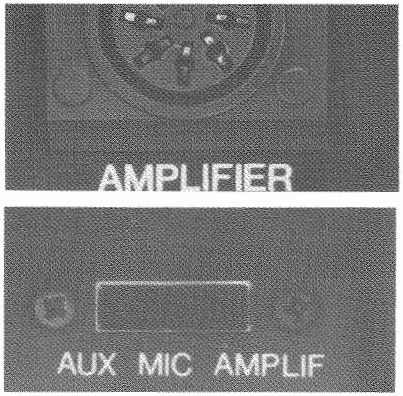
SETTING UP

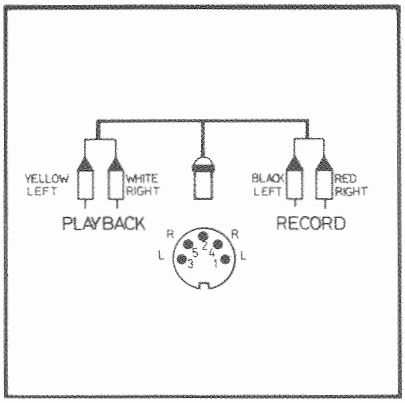
Your Beocord 8004 should be positioned on a horizontal surface – either a table or a shelf.

Depth measurement, including cables and connectors is 30 cm; width measurement is 53 cm.

Avoid placing the Beocord 8004 in direct proximity of a radiator – where temperature is considerably higher than that in other parts of the room.







Power mains
Beocord 8004, type 4865 is designed for 220 volt 50–60 Hz operation and can function – without modification – on 190 to 240 volts.
This Beocord fulfils the conditions stated in the EEC Directive 76/889 concerning radio frequency interference.

PRESETTING
THE ELECTRONIC CLOCK
An electronic clock is incorporated into the design of the Beocord 8004. The purpose of this clock is to start and stop the tape recorder at predetermined times. Normally, the clock is not visible: if TIME SET is pressed the time counter will display actual time. Indication is given in the form of the flashing point located lowest-midway, between the digits. When you connect your Beocord 8004 to the power mains, the clock will start with 00:01. Setting the clock to the actual hour is done as follows: If – for example – your watch shows that the time of day is 13.30: Press TIME SET and digits 1 3 3 1. When your watch shifts to 13.31, press GO.
In the event of a power mains failure, reset the electronic clock again. Check the clock reading, press TIME SET and conclude by pressing GO.

Connecting to Beomaster 8000
Connect cable 6270222 to TAPE 1 socket on the Beomaster 8000. Connect other end of cable to AMPLIFIER socket on the back of the Beocord 8004, and check that the switch on the front of the cassette recorder is at AMPLIF.

Other receivers with DIN plug
Use cable 6270222.

Phono plugs
The Beocord can also be connected to a receiver or amplifier with RCA phono plugs. Use cable 6270215. When using the Beocord 8004 in conjunction with other radio receivers or amplifiers, the two outermost pins must be removed.
Turn anti-clockwise with a small screwdriver.

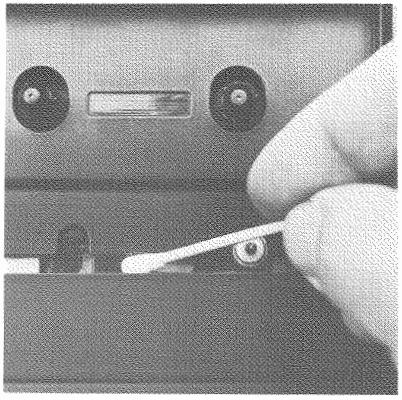
MPX filter
The switch on the base of the Beocord should as a rule be switched to OUT. The IN position is designed for recording FM stereo broadcasts from receivers with insufficient multiplex signal muting.

MICROPHONE AND AUX
Recording microphone
The MIC socket on the front of the Beocord is designed for a stereo microphone with 5 point DIN plug. An adaptor cable type 6271160 can be supplied for a mono microphone with jack plug. Recordings will be mono with the two channels combined.
A double adaptor cable type 6271159 can be supplied for stereo recordings using two mono microphones with jack plugs.
Microphone data: Sensitivity 0,1 – 3 mV, 400 – 1500 ohms.

AUX input
The same socket may be employed as an auxiliary input – for instance, for copying from another tape recorder. Standard cable type 0961014 is used between the two tape recorders and the switch is placed in AUX.
(Sensivity: 120 mV/1.2 M ohms).

Remote Mains Switch
The programming for tape playback and recording also applies when the Beocord 8004 is used in connection with the Beomaster 8000.
If you wish to use the Beocord 8004 with another radio receiver, you can purchase a Remote Mains Switch, type 4002, which can switch the receiver on and off.

International Guarantee
This Bang & Olufsen product carries a guarantee against defects in workmanship and materials.
It is a national guarantee issued by the Bang & Olufsen Distributors for the country in which the product is purchased initially.
The terms of this guarantee apply principally to the country of origin but will also be met by any authorised Bang & Olufsen dealer in the other countries in which Bang & Olufsen products are officially marketed.
In order to obtain »guarantee« service whilst in a country other than that in which the product was originally purchased, it is essential to ensure that the original Bang & Olufsen guarantee form, which you may claim issued at the purchase of the product, is completed in full and that your copy is presented to the dealer on request for service.



MAINTENANCE AND UPKEEP
Tape head
To ensure pure and clear sound quality, the magnetic heads and capstan axle must be kept free of tape dust.
Use a rinsing fluid designed for this application.
Avoid the use of denatured alcohol; it may contain ingredients hostile to rubber or plastic.

Surfaces
Oily spots that may appear should be removed with a soft, dry cloth.

Teak and rosewood
If wood surfaces seem off-coloured and dry, you might apply a thin layer of teak or rosewood oil – though never more than twice yearly.

For the UK market only.
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 in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows.
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black. The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.
Ensure that your equipment is connected correctly. If you are in any doubt, consult a qualified electrician.
This set requires a **3 Amp.** fuse in the mains plug.

TECHNICAL DATA	BEOCORD 8004
Type No.	**4864**
Compact cassette	C46-C60-C90-C120
Tape head	Sendust
Recording system	HX PRO
Noise reduction system	Dolby B and C
Tape switch	Aut. ferro, chrom and metal
Wow and flutter, DIN	$<\pm 0.1\%$
Wow and flutter, WRMS	$<\pm 0.045\%$
Speed deviation	$<\pm 1\%$
Fast forward and rewind C60	70 sec.
Frequency range ferro/chrome/metal	20–20.000 Hz ±3 dB
Signal-to-noise ratio CCIR/ARM:	
Metal Dolby NR	B: >65 dB, C: >74 dB TDK-MA
Chrome Dolby NR	B: >66 dB, C: >75 dB TDK-SA
Ferro Dolby NR	B: >64 dB, C: >72 dB BASF LM I
Signal-to-noise ratio IEC/DIN:	
Metal	>57 dB, TDK-MA
Chrome	>58 dB, TDK-SA
Ferro	>56 dB, BASF LH I
Driveability metal	<5 dB
Driveability chrome/ferro	<10 dB
Distortion metal	<2%
Channel separation	>35 dB
Erasure	>70 dB
Erase frequency	96 kHz
Radio input, LINE	20 mV/33 kohms
Microphone input	0.15 mV/3 kohms
AUX input	40 mV/68 kohms
Radio output, adjustable	1000 mV(500-2000 mV) 10 kohms
Headphones	Max. 10 V/56 ohms
Power supply	220 volts
Power frequency	50-60 Hz
Power consumption	Max. 50 watts
Dimensions W×H×D	53×13×30 cm
Weight	7.5 kg

Subject to change without notice

Bang&Olufsen

3504237 12-82 Printed in Denmark by Bogtrykkergården a-s, Struer Type 4865 English