

What Advantages does your BEOCORD 2400 give you in the Form of Facilities, Performance and Reliability?

Pressure diecast chassis for the mechanical section - provides a high degree of mechanical stability, assuring you that your BEOCORD 2400 is transport-proof.

Silicon transistors in the fully transistorized amplifiers - a guarantee of highly stable operation, good signal-to-noise ratio, minimum distortion, and low power consumption.

Separate tape heads for record and playback - permit you to monitor the tape while a recording is in progress.

4-track record and playback - permits maximum playing time for your tapes, both mono and stereo.

Two-hand operating of record function - protects you against accidental erasure of tapes.

High degree of channel separation - in mono recordings, too, you will have good separation between the two channels.

Twin-faders - make it easy for you to adjust for stereo balance on both record and playback.

Besides, the dual amplifier of your BEOCORD 2400 gives you the following interesting facilities: Sound on sound (part-song) recordings; adding echo to recordings; synchronous recordings such as pilot signals for slide projectors synchronized with sound reproduction; language laboratory: recording a foreign-language text on one track and conversation exercises synchronously on the other track.

Photo-stop feature - permits you to stop tape during programme scanning, if tape breaks, and at end of tape.

Line jack - facilitates tape-copying from or to another BEOCORD; also permits connection to a large hi-fi system such as the BEOLOB 5000.

Your BEOCORD 2400 will operate as a hi-fi amplifier - the amplifier may be used without the motor running. It has separate inputs for microphone, gramophone, radio or FM/AM tuner, and provision for connection of two pairs of stereo speakers.

And your BEOCORD 2400 meets the minimum specifications for the

DIN 45 500 Standards

(see under Technical Data on page 17 for additional information).

CONNECTING THE BEOCORD 2400 TO THE MAINS

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Transport Securing. The mechanical part of the BEOCORD 2400 is locked by means of two hexagonal screws, one in either side. First the plastic hoods are removed, then the screws are turned to the left and taken out.

The BEOCORD 2400 is connected to the AC mains by means of the mains lead, which is in a compartment under the bottom. The Beocord is equipped with a mains voltage change-over switch; check that it is set for your local mains voltage.

The mains voltage changeover switch can be set for 110, 130, 220 and 240 volts. BEOCORD 2400 type 4134 is for operation on 50 Hz mains. BEOCORD 2400 type 4135 is for operation on 60 Hz mains.

NOTE!

For the sake of necessary ventilation the dust cover should be fixed to the tape recorder only when the latter is out of function.

EXTERNAL CONNECTIONS



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The jacks for connection of stationary units such as a radio set, record player, and loudspeakers are located on the bottom plate of your BEOCORD 2400. This feature permits discreet installation of cables to the rest of your stereo system.

Radio input. Input jack for your radio set or AM/FM tuner, which should have a DIN standard tape-recorder output jack.

A type 0961014 cable should be used for making the connection, enabling you to record from, and play back through, the amplifier section of the radio set.

The built-in radio pre-amplifier of the BEOCORD 2400 is switchable between two sensitivity levels, L and H. Switching is performed through a hole in the bottom of the BEOCORD. The switch should normally be in the L position. The H position is used for copying tapes from the line jack of another tape recorder, and in conjunction with an FM tuner having a high output level.



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Gramophone Input. This input is equipped with a pre-amplifier, permitting you to use a magnetic-pickup record player not equipped with a pre-amplifier, for example a BEOGRAM 1000 V, in which case the gramophone pre-amplifier incorporated in your BEOCORD 2400 should be switched to L. Switching is performed through a hole in the bottom of the BEOCORD. The H position is used for a record player which has a built-in pre-amplifier, such as the BEOGRAM 1000 VF, or a record player equipped with a crystal pickup.

LINE



Line Input and Output. This jack is wired for both signal input and signal output. It is normally used for interconnecting two tape recorders for copying or for simultaneous recording (see under **Copying** on page 15), or you may use it for connecting your BEOCORD 2400 to a hi-fi stereo amplifier having line input. A type 0961014 cable should be used.

By using a type 6270019 cable you can have off-the-tape monitoring in conjunction with the output amplifier of the radio set you have connected to your BEOCORD 2400. This cable is a twin cable and has an additional plug for insertion in the BEOCORD radio jack.

Speakers. A pair of stereo speakers should be plugged into the two jacks L and R, left and right channels, respectively.

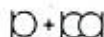
An additional speaker pair may be plugged into the two jacks marked 2, L and R.

All four speakers will operate together.

You will get best tonal performance with only one pair of stereo speakers in operation. The amplifier system will not be overloaded by the simultaneous use of both speaker pairs, but less output power will be available for each individual speaker.

The four speakers should be wired separately; for example do not use speaker setups having common return leads.

OTHER CONNECTIONS



Jacks for small units such as microphones and headphones are located in the left and right sides, respectively, of the control panel and are therefore easily accessible.

Microphone Jack. Balanced input for low-impedance (200 ohms) stereo or mono microphone.

This input is suitable for a B & O stereo microphone such as a BM 7, and for BM 6, MD 8 similar low-impedance mono microphones.

A mono microphone plugged into this jack will work into the left channel.



Microphone Jack. Balanced input for low-impedance (200 ohms) mono microphones. This input works into the right channel only.

A stereo microphone connected to this input will provide an inverted sound picture. The left sound signal will be picked up on the right channel and the right sound signal on the left channel. Used to provide a properly oriented sound picture when using suspended microphones. Two mono microphones plugged into these jack may be used instead of a stereo microphone.



Headphone Jack. For headphones with impedances between 5 and 500 ohms.

CONTROLS



Main Switch and Speed Selector. To start your BEOCORD 2400, turn the knob (22) to the desired speed. Three tape speeds are provided, with intermediate «off» positions. The three speeds,

I: 4,75 cm/sec. (1 7/8 in./sec.),

II: 9,5 cm/sec. (2 3/4 in./sec.),

III: 19 cm/sec. (7 1/2 in./sec.),

are suited for, respectively,

I: Recordings of a speech.

II: Recordings from gramophone and radio.

III: Exacting recordings, for instance of music from a microphone.

The two meters will show white light when power is applied to the BEOCORD.

IMPORTANT: When the BEOCORD is not in use or is used as an amplifier only, the control (22) and the lever (20) should always be set at 0. The rubber intermediate wheels in the BEOCORD are then disengaged, thereby avoiding deformation and consequent mechanical noise. However, should you forget to set these two controls at 0 so that deformation results, you can regenerate the wheels by letting the BEOCORD motor run for some time before use.



Cut-out for Automatic Stop. Operates only at end of tape and where tape coating has been removed (see under **Automatic Stop** on page 9).

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Tape Counter. Should normally be reset immediately after inserting of tape.

Tape Control Lever. Controls the fast forward and rewind functions as well as the normal forward motion.

Forward

Fast forward

Fast rewind

Pause Control. Pressing this button will stop the tape transport mechanism momentarily. The button can be locked for stops of some duration. Used for tape editing etc.

Monitor. With this button depressed, you can monitor the signal being recorded, before recording (before-the-tape monitoring, button depressed), or after it has been recorded on tape (off-the-tape monitoring, button released).

Pushbuttons for Playback, left or right channel only, stereo, or both channels combined into one.

Pushbutton for Sound on Sound.

Microphone volume controls, left and right channels.

Gramophone volume controls, left and right channels.

Radio volume controls, left and right channels.

S on S, Echo and Line Input volume controls, left and right channels.

Playback volume controls, left and right channels, for both speakers and headphones.

Bass Control. With this control at mid-scale you get linear reproduction of the bass range.

Treble Control. With this control at mid-scale you get linear reproduction of the treble range. The base and treble ranges can be accentuated by turning these controls clockwise and anti-clockwise, respectively.

Speaker Switch. These pushbuttons permit you to select between speaker pair 1, speaker pair 2, and both speaker pairs together.

Echo and Line Input Switch. With this pushbutton depressed you can make recordings with echo; with the button released, the line input is cut in. Consequently you cannot make recordings with echo via the line input.

Amplifier. This pushbuttons applies power to the BEOCORD amplifier without starting up the tape transport motor.

Record Buttons. Left channel: button 13, tracks 1 and 4.

Right channel: button 14, tracks 3 and 2.

Synchro Playback Button. For synchronizing two recordings on separate tracks.

VU Meters with dB Scales. Show red light when a recording is in progress. Their pointers indicate the volume level of the programme being recorded from one or more sources. For correct recordings, pointer deflections should stay inside the white scale sectors, with only very brief excursions past 0 into the red dB scale sectors.

Operation

Inserting Tape

Place the full reel on the left-hand turntable (see pull-out sheet). Slide the tape down along the vertical edge of the control panel, thereby also feeding it around the two slack absorbers and down into the gap in front of the tape heads. Pull the tape into the gap on the empty reel (which should be placed on the right-hand turntable) and, putting a finger on the tape end, turn the empty reel one turn and a half. When using thin tapes, such as triple-playing tapes, the tape may show a tendency to twist. This can be avoided by bringing the tape outside the slack absorbers while inserting it and letting it slide into the fixed tape guides.

Automatic Stop

The BEOCORD 2400 is equipped with a combined **photo-electric** and **metal-foil-contact** stop device.

Programme Scanning

The automatic stop device when actuated release the tape control lever (20) and returns it to its neutral position, both from normal forward tape motion and from fast forward and rewind.

The control (19) selects between two functions of the automatic stop device.



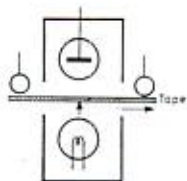
PHOTOSTOP 1. In this position, the automatic stop is actuated by

- Metal foil or metal coating not less than 30 mm long;
- End of tape;
- Tape breakage;
- Clear window in tape coating.

These facilities enable rapid and accurate programme scanning; for example, you may place metal foil between large sections of a programme (concertos) and clear windows between small sections (movements).

You can make a clear window by removing the coating over a length of approx. 10 mm, either by scraping it off with a sharp knife or, in the case of polyester and mylar tape, by dissolving the coating with trichloroethylene.

(Note: Trichloroethylene gives off dangerous vapours. It attacks many plastics).

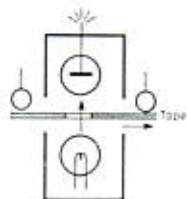


Programme scanning is possible on tapes with recordings in only one direction (for example tracks 1 and 3). The clear windows will give stop in both directions and undesired stop in the other tracks (for example tracks 4 and 2).

PHOTOSTOP 2. In this position, the automatic stop device is only operated by

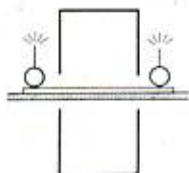
Metal foil or metal coating not less than 30 mm long.

Use this function when you wish to wind a tape with clear windows through quickly without stopping at each window.



Mode of Operation.

A small filament lamp and a photo element are placed on opposite sides of the tape and will operate in the PHOTOSTOP 1 position when the tape coating no longer prevents the passage of light. In the PHOTOSTOP 2 position, the filament lamp is switched off.



A pair of sensor contacts will operate when in contact with a conductive surface on the inner side of the tape.

Tape Motion

Tape motion is controlled with the tape control lever (20). To make the tape move at the chosen speed, move the lever straight forward. For fast tape motion, move the lever diagonally to the left or right, for rewind and fast forward, respectively. Returning the lever to neutral will stop all tape motion. In the automatic stop functions the lever will automatically slip back into neutral. The lever can be operated only if a tape has been inserted in the BEO-CORD and the metal foil at the tape end brought past the tape heads and photostop device.

Location of Recordings on Tape



The BEOCORD 2400 has facilities for locating recordings on the tapes as follows:

Mono: You can make mono recordings in four tracks - two tracks in either direction as shown in the sketch. You may record the four tracks in any desired sequence, but you will naturally prefer to record on track 1 first and then on track 3, thereafter, after reversing and turning over the reels, recording on track 4 and 2.

Stereo: Two stereo recordings can be made, one in either direction. Track 1 will be the left channel and track 3 the right one, and after reversing the reels track 4 will be the left and track 2 the right channel.

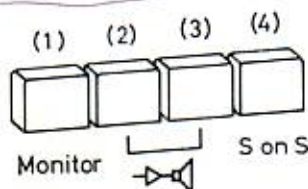
To play back pre-recorded tapes, mono or stereo, with inserted tape in the BEOCORD, move the tape control lever (20) straight forward, causing the tape to move forward at the speed you have selected with the knob (22). - The desired programme is selected with pushbuttons (2) and (3), and the tape tracks will be played back as follows:

a. (2) depressed: Track 1 or 4, left channel on both outputs.

b. (3) depressed: Track 3 or 2, right channel on both outputs.

c. (2) and (3) depressed: Tracks 1 and 3 or 4 and 2 are played back through the left and right outputs, respectively (stereo).

d. (2) and (3) released: Tracks 1 and 3 or 4 and 2 are played back together through both outputs.



Speaker pairs 1 and 2 are selected with pushbuttons (10) and (17).

Playback volume is adjusted with knobs (9). The knob section marked L controls the left channel; R controls the right channel. For mono, the two knob sections should accompany each other. Knob (9) also control headphone volume.

Balance

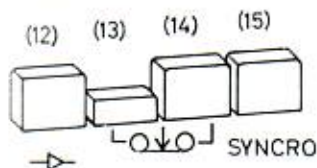


It sometimes happens with stereo recordings that one channel is weaker than the other one, causing some of the realism of stereo reproduction to be lost. Balance can be accomplished by individual adjustment of the two knob sections L and R with respect to each other.

Bass and Treble. These two knobs control both left and right channels.

When a radio set or hi-fi amplifier is used for playback, volume and tone should be adjusted with the controls of the radio set or amplifier.

Record Mono Track 1



To record a mono programme, depress record button (13) while moving the tape control lever (20) straight forward. This will lock the button (13) in its depressed position, and the tape transport mechanism will start up. The button (13) will release only when the tape control (20) is returned to the neutral position.

You may find it practical to use the **Pause Control** (21) here, seeing that tape transport does not begin until you have again released the pause control.

VU Meter (L) shows red light on record.

Microphone recording level is adjusted with the left section (L) of knob (5). The pointer of the VU meter should stay inside the white scale sector, with only brief excursions into the red scale sector.

Gramophone recording level is adjusted in the same manner, using knob (6L).

Radio recording level, knob (7L).

Line Input recording level, knob (8L).

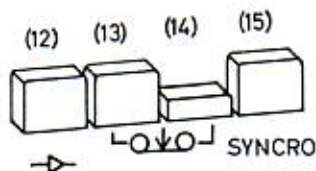
Before-the-tape and Off-the-tape Monitoring. Recordings may be monitored both through speakers and through headphones. Depress the record button (2) and adjust volume with knobs (9). Depressing the monitor button (1) will switch from off-the-tape monitoring to direct reproduction of the signal from the programme source (before-the-tape monitoring).

Note: While recording from a microphone, howling may easily occur, due to acoustic feedback between the microphone and speakers. This inconvenience can be avoided by using headphones for before-the-tape and off-the-tape monitoring.

Mixing and Fading. The four recording level controls, (5), (6), (7), and (8) may be operated simultaneously, permitting mixing and fading, for instance between microphone and gramophone, without interrupting the recording. To do this, pull back the knob for the programme to be attenuated and push forward the knob for the programme to be amplified.

Stop. On completion of a recording, the tape control lever (20) should be returned to neutral. The record buttons (13) and/or (14) will then release automatically so that your BEOCORD 2400 will be ready to play back after the rewind operation. This arrangement protects you against accidentally erasing recordings on the tape.

Record Mono Track 3



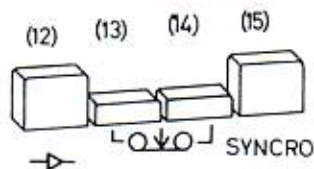
Recording on track 3 are performed with the record button (14) depressed instead of (13), and monitoring is performed with button (3) depressed instead of (2). Otherwise, operation is as described under **Record Mono, Track 1** except that adjustments should be made with the right-hand knob sections (R).

Recording in tracks 4 and 2 can be made after reversing and turning over the reels: Track 4 with record button (13) and track 2 with knob (14) depressed.

Record Mono Stereo Programme

It is perfectly possible to make a mono recording of a stereo programme, such as a stereo record, either on track 1, 3, 4 or 2. Both knob sections, (6L) and (6R), should be adjusted for correct VU meter deflection. Otherwise operation is exactly as described under **Record Mono**.

Record Stereo



To make a stereo recording, press down both record buttons (13) and (14) while moving the tape control lever (20) straight forward.

Both VU meters should show red light, and their pointers will indicate the recording level. Both knob sections, (L) and (R), should be operated for both record and playback adjustments.

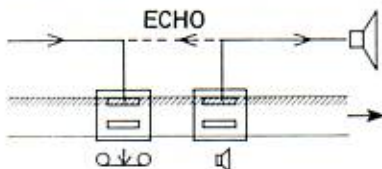
Recording level is adjusted with knobs (5), (6), (7), and 8 for the respective programme source.

These knobs are channelwise adjustable and may therefore also be used for balance adjustment, adjusting the two knob sections (L) and (R) individually with respect to each other. Recording level is checked on the two VU meters.

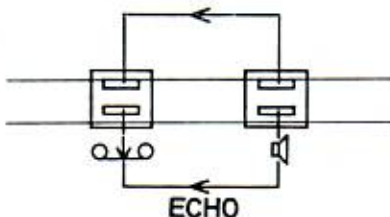
For monitoring - whether before-the-tape or off-the-tape - both playback buttons, (2) and (3), should be depressed. For the rest, the procedure is as described under **Record Mono**. Location of stereo programmes is shown on page 10. Stereo recordings can be made in both directions of the tape.

Special Applications

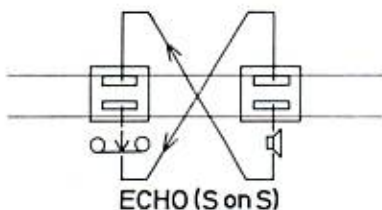
Record Echo



Record Echo, track 1 or 4: Depress button (11) and adjust echo signal level with recording level control (9), using the right section (R) of the knob.



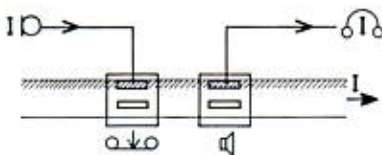
Record Echo, track 3 or 2: Depress button (11) and adjust echo signal level with recording level control (8), using the left section (L) of the knob.



Record Echo Stereo: Depress button (11) and adjust echo signal level with recording level control (8), using both sections, (L) and (R), of the knob.

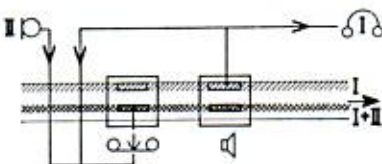
Record Echo Stereo may also be done with the S on S button (4) depressed instead of (11). This function produces a different kind of echo due to the fact that the echo signal is «crossed over» into the other channel. The echo signal should not be increased to the point where it is stronger than the original signal as this will ruin the recording.

Sound on Sound (Multiplayback)



To make sound-on-sound or trick recordings you transfer a recording from one track to another whilst making another recording on the other track. In this way, for instance, you can sing in 2-, 3-, or 4-parts harmony with yourself. The sound-on-sound feature can be employed for mono recordings only as both tape heads and both tracks are in use at the same time. The procedure is as follows:

1. Record the first part on track 1 as a conventional mono recording. Then rewind the tape to the point th where you began recording.
2. Record the second part on track 3 with the S on S button (4) depressed, causing the first part to be transferred to track 3. Recording level of the transferred signal is adjusted with the recording level control (9), right section (R) of the knob. While recording the second part on track 3, track 1 should be monitored with headphones (button (2) depressed).



3. Now record the third part on track 1, this time adjusting the recording level with knob (9), left section (L) of the knob. Then record the fourth part on track 3, etc, etc. All these recordings should be made with button (4) depressed.

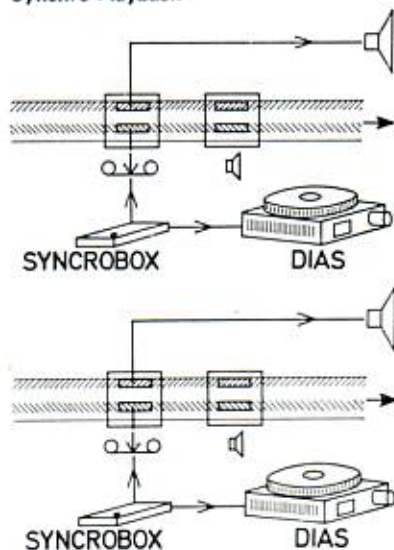
In the same way sound on sound recordings can be made in tracks 4 and 2.

In order to accomplish synchronous recordings you should always monitor the preceding recording - in other words, button (1) should be released (off-the-tape monitoring). By proceeding as described above you can record any desired number of parts, but the quality of the final result depends on the quality of each individual recording. Since not only the desired programme will be recorded but also a certain unavoidable amount of basic noise, repeated re-recording will cause the noise to become audible and, ultimately, objectionable. This inconvenience can be limited by:

- a. using the highest tape speed;
- b. using programme sources having as little noise as possible;
- c. recording at the highest possible level (without overdriving the tape); and
- d. recording the main part last so that it will be clearest.

All programme sources (except sources connected to the line input jack) and intermixings between them may be used. The only restriction is that they must be mono programmes.

Synchro Playback



This function may be used to synchronize two recordings on separate tracks which you do not want to mix by sound-on-sound recording. This feature may be utilized for control of a slide projector, with narration recorded on one track and pilot impulses on the other; or for language instruction, with exercises on one track and translations on the other track - or leaving the other track free for individual exercises.

To prepare lantern-slide control, proceed as follows:

Record the narration for your slides on track 1 as a conventional mono recording. Rewind to where the narration begins. Plug a B&O Synchrobox into the radio input (the radio pre-amplifier should be in the L position).

Depress buttons (14), record, and (15), synchro, while moving the tape control lever (20) straight forward.

To play back track 1, depress button (2). On hearing the part of the narration where you wish a change of slides, record a pilot impulse on track 3 of the tape by pressing the red button on the synchrobox for approx. 1 second.

After having laid down the entire programme, rewind the tape; both slides and sound can now be reproduced synchronously. Button (2) and (3) should be depressed and the synchrobox switched to playback and connected to the slide projector (see also Synchrobox Instruction Manual).

In the same way synchro playback recordings can be made in tracks 4 and 2.

P.A. (Public Address System)

Your BEOCORD 2400 can be used as a combined music and paging system. At exhibitions, shows, fairs, and conventions etc. where taped music is played, you may make announcements or page individual persons, turning off the music at the same time.

The button (12) should be depressed during tape playback; to cut in the microphone, depress the button (1). Microphone level is adjustable with knob (5).

Copying

You may copy from one BEOCORD 2400 to another, or between similar BEOCORD models. Both mono and stereo copying are possible.

The BEOCORD from which you wish to copy should be set for normal reproduction (see section **Playback of Re-recorded Tapes**) and a type 0961014 cable plugged into the LINE jack on the bottom plate of the tape recorder.

The other end of the cable should be plugged into the radio input jack of the BEOCORD you wish to use for recording, and the radio pre-amplifier should be switched to H. Otherwise the procedure is as described under **Record Mono** and **Record Stereo**.

Additional applications

This concludes the description of how to operate the BEOCORD 2400; after having used your tape recorder for some time you will not doubt discover additional interesting applications.

Tapes

Additional Information

Your BEOCORD 2400 comes to you adjusted for LOW NOISE tape. If you wish to use a different type of tape with different electrical data it will be necessary to readjust your BEOCORD 2400 if it is to meet its specifications. Leave this check and adjustment to your dealer.

Tape Splicing



Tape ends to be spliced should be laid together in line with each other and cut diagonally, preferably with non-magnetic scissors or cutters so as to avoid clicks when the tape is played back. Then position the tape ends so that they only just touch each other. Place the adhesive tape (use only special-purpose splicing tape) on the back (bright side) of the recording tape parallel with the cut and press it carefully into place. Care should also be shown in removing any excess of splicing tape so that the joint will in no place be wider than the recording tape - if anything, it should be a trifle narrower (so that it will clear the tape guides). The track on the top of the tape head cover may be found useful when holding the tape ends together while cutting and splicing the tape.

Cleaning of Tape Heads

The tape heads must be kept free of dust and dirt if maximum recording and playback quality is to be realized. Even small particles of dust can impair the quality of a recording, and if this has happened there is nothing you can do about it. It is therefore necessary to clean the tape heads as often as possible and in any case always before making recordings of any importance.

To do this, remove (lift up) the tape-head cover, dip a match with some cotton wool wrapped around it in alcohol and rub it against the front of the tape heads. The tape must be removed from the heads during this operation and should not be put back until the alcohol has evaporated completely.

The fixed tape guides and the capstan shaft should be kept clean in the same manner.

NOTE : Certain makes of tape are fastened with adhesive tape at one end. If this is not removed before use, the adhesive will stick to the tape heads and completely ruin recording and playback.

Magnetization

You are advised against touching tape heads, tape guides, or components on the tape-head bridge with steel objects as this may cause the said components to become magnetic, which will in turn introduce hiss on the tape while making recordings. If this nevertheless happens you should contact your dealer, who can perform the necessary demagnetization for you.

Service

Your BEOCORD 2400 will, apart from cleaning of tape heads, tape guides, and capstan shaft, require no regular overhauls as it has self-lubricating bearings. You are therefore advised attempting lubrication of any kind; this might cause defects in your BEOCORD 2400.

Technical Data

BEOCORD 2400, Types No. 4134 and 4135 **Meets minimum specifications for DIN 45 500**

Dimensions and Weight

DIMENSIONS: 449 mm long, 358 mm deep, 225 mm high inclusive of cover
(17 11/16 x 14 1/8 x 8 7/8 in.).

WEIGHT: 15.5 kilos (34.1 lbs).

Power Supply

VOLTAGE : 110 — 130 — 220 — 240 volts AC

FREQUENCY: Type 4134 : 50 Hz. Type 4135: 60 Hz.

POWER CONSUMPTION: 15 — 125 watts.

External Connections

INPUTS: Microphone: 50 — 200 ohms — 35 μ V, balanced .

Inputs for two mono microphones in stereo operation.

Gramophone: Switchable between low-impedance, L; and high-impedance, H.

L: 47 k ohms — 1 mV/1000 Hz.

H: 100 k ohms — 35 mV/1000 Hz.

Radio: Switchable between low-impedance, L; and high-impedance, H.

L: 47 k ohms — 2.5 mV/1000 Hz.

H: 100 k ohms — 50 mV/1000 Hz.

Line: 47 k ohms — 250 mV/1000 Hz.

OUTPUTS: Line 1.25 V at 7.5 k ohms.

Radio: 1.25 V at 25 k ohms.

Speaker: I and II, 4 ohms both.

Headphones: 100 ohms.

Tape Transport

TAPE SPEEDS: 19 cm/sec. (7 1/2 in./sec.).

9.5 cm/sec. (3 3/4 in./sec.).

4.75 cm/sec. (1 7/8 in./sec.).

NUMBER OF TRACKS: 4.

REEL SIZE: Max. 18 cm (7 in.).

PLAYING TIMES: Tape speeds 4.75 9.5 19 cm/sec.

360 m (1200 ft) 4 x 120 4 x 60 4 x 30 min.

540 m (1800 ft) 4 x 180 4 x 90 4 x 45 min.

720 m (2400 ft) 4 x 240 4 x 120 4 x 60 min.

1080 m (3600 ft) 4 x 360 4 x 180 4 x 90 min.

For stereo, divide above times by two.

FAST FORWARD AND REWIND: 170 sec.

TAPE COUNTER: Pushbutton reset, 3-digit readout.

WOW AND FLUTTER (wow frequencies above 4 Hz attenuated 3 dB/octave):

Tape Speed	RMS Value	Peak Value
19 cm/sec.	<0,07 %	<0,2 %
9,5 cm/sec.	<0,11 %	<0,3 %
4,75 cm/sec.	<0,18 %	<0,5 %

SPEED DEVIATION: <1 %.

TAPE STOP: Photo-electric; functions at end of tape and if tape breaks, also useful for programme scanning.

SLACK ABSORBER: Prevents jerks when tape is stopped and started. When using thin tapes, such as triple-playing tapes, tape twisting can be avoided by bringing the tape outside the slack absorbers when inserting it.

Amplifier

POWER OUTPUT: 2 x 10 watts.

FREQUENCY RESPONSE:

19 cm/sec.	20–18000 Hz \pm 2 dB
9,5 cm/sec.	20–13000 Hz \pm 2 dB
4,75 cm/sec.	40–7500 Hz \pm 2 dB

EQUALIZING: DIN 45 513 1966–67 = NAB 1965.

DISTORSION: Amplifier only <1 % at 2 x 10 watt.
<3 % over tape with VU meter at 0.

SIGNAL-TO-NOISE RATIO: 60 dB as measured according to DIN 45 405.

CROSS TALK: Mono >60 dB at 1000 Hz and >50 dB at 10000 Hz.
Stereo >55 dB at 1000 Hz and >45 dB at 10000 Hz.

ERASURE: > 70 dB with 100 kHz push-pull oscillator.

All measurements concerning the tape operation were performed with LOW NOISE tape with nominal data.

TONE CONTROL RANGES: 40 Hz \pm 15 dB ; 10000 Hz \pm 10 dB.
 \pm 20 dB

TRICK FACILITIES: Sound on Sound, synchroplayback, echo.

PUBLIC ADDRESS SYSTEM: Amplifier may be operated without the motor running.

Semiconductors

SEMICONDUCTORS: Transistors: 48
Diodes: 3
Rectifiers: 1 (bridge circuit)
Thyristors: 1

Accessories:

SYNCHROBOX: Type 4001.

MICROPHONE, MONO: Type BM 6, Type MD 8 or BEOMIC 1000.

MICROPHONE, STEREO: Type BM 5.

RADIO CABLE: Type 0961014.

FLOOR STAND: Type 6002.

BOOM: Type 6003.

TAPE RECORDER TROLLEY: Type 4009/3019.

Above specifications are subject to change Without notice.