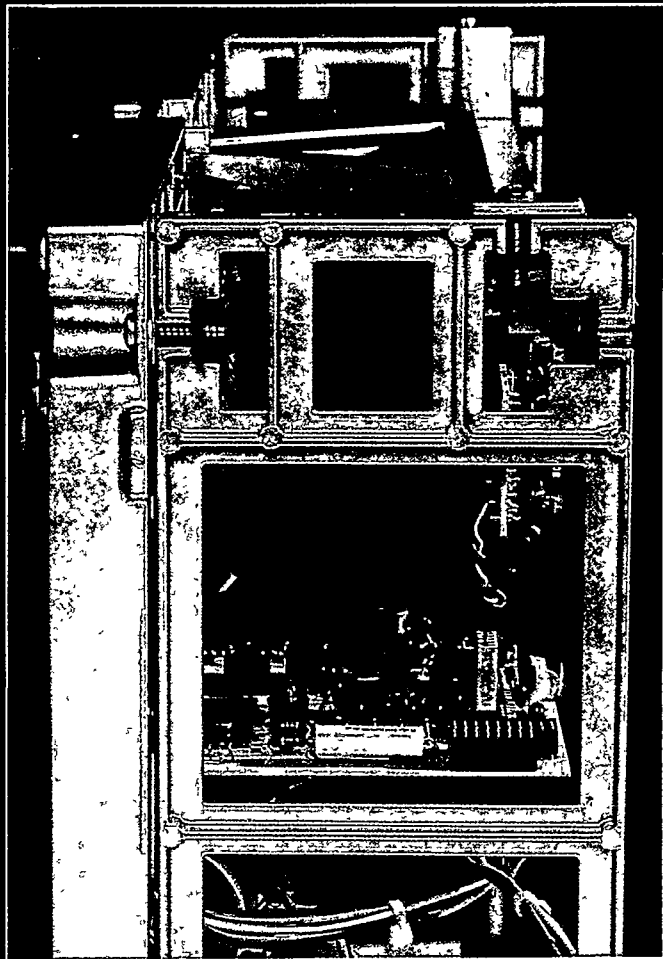


REVOX B77

THE TAPE RECORDER



A well designed tape transport mechanism will not distort mechanically. It is insensitive to shocks and vibrations and will retain these qualities over a wide range of temperatures. Therefore, REVOX B77 tape recorders use diecast parts for the motor chassis, the side bearers, the crossmember and for the head block and the pinch roller arm. This ensures exceptional stability for the precision tape guiding system and the sound heads, as well as for the motors and the brake assembly. The motors are sturdy AC asynchronous types – unbeatable in simplicity and reliability – thus especially suited for heavy duty use.

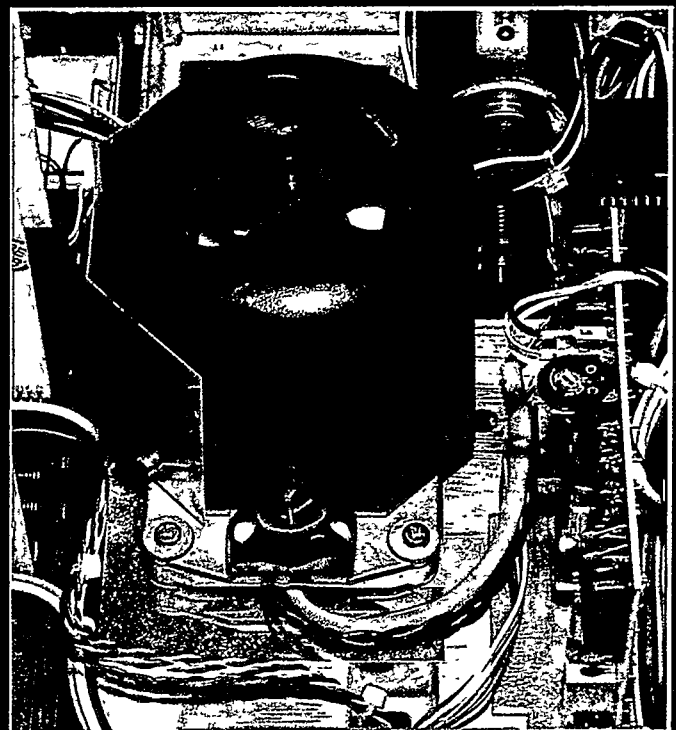


Precision cannot be realized without ruggedness. This is the reason why all important parts of the B77 transport mechanism are made from solid diecastings.

Magnetic tape recorders are an outstanding example of the perfect combination of precision mechanics and top performing electronics. Even the best electronic circuitry would soon become worthless if the original precision in tape guiding is lost as a result of insufficient long term stability. One of the basic requirements, therefore, is to ensure stable performance for years with a rigid mechanical design which disregards the possible advantages that may lie in such tempting advertising claims as "feather weight" and "slim line"!

In 1967 STUDER REVOX had already ushered in the age of electronic capstan speed control for domestic tape recorders. Ever since then many have tried to copy it, yet they have never been able to match its simplicity and effectiveness.

The principle of electronically regulating a sturdy asynchronous motor by means of a separate precision reference has stood the test so well that it has been adopted for the STUDER professional tape recorders years ago. The capstan motor and its precision reference combined with the inductive speed sensor and its control circuits form a regulating loop which is highly insensitive to variations in power line voltage and frequency or changes in load. This system, which has proven its reliability in more than half a million tape drives, combined with ideal tape guiding results in outstanding motion stability (freedom from wow and flutter) which remains unchanged for years. The remarkable mechanical and electronic stability of the complete tape transport mechanism makes it well suited for mobile operation by powering it from car batteries in conjunction with an inverter.



Direct drive capstan motor with tacho generator and servo electronics to ensure outstanding speed stability independent of variations in load or changes in the electrical supply voltage or frequency.

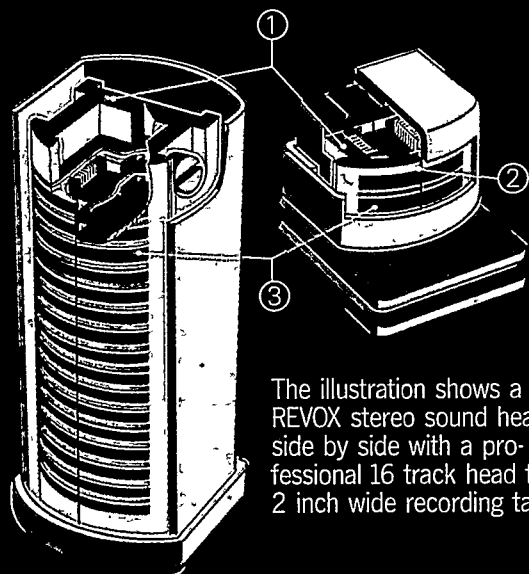
For pitch matching or to achieve special effects, motor speed can also be varied continuously over a wide range with the help of an external speed control.

REVODUR long-life heads



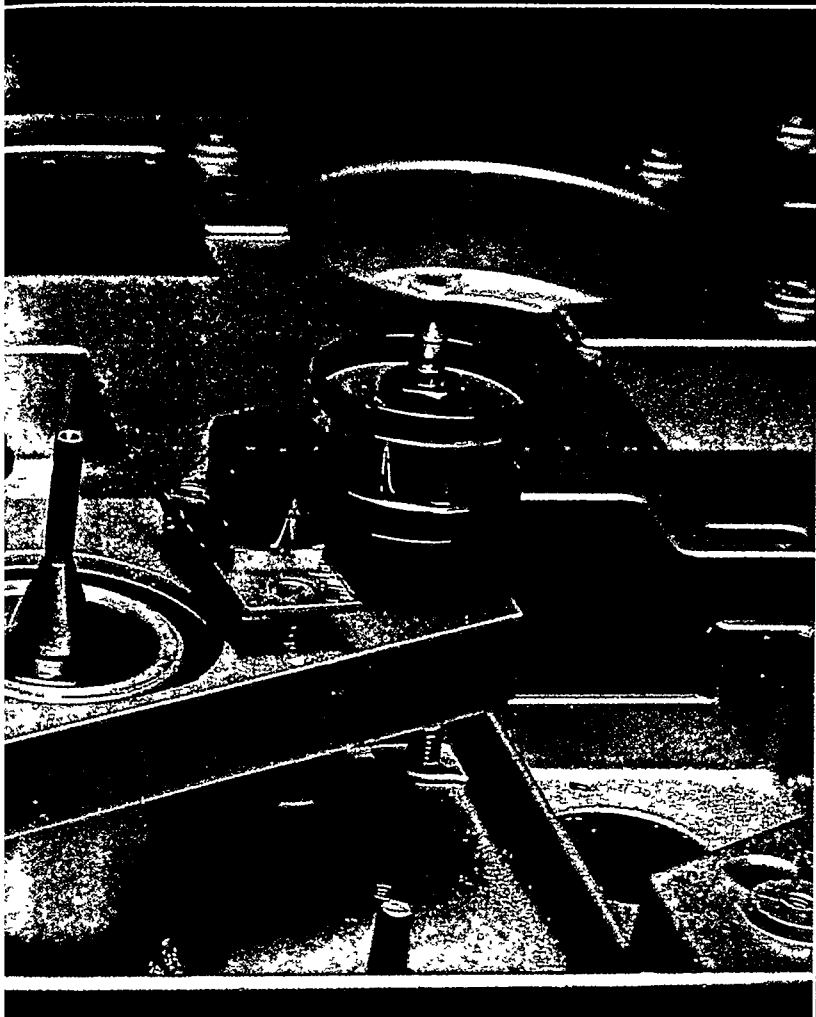
No ferrite heads; Revodur sound heads instead – built to professional standards

REVOX sound heads are of the all-metal type. Their construction is identical with that of the well proven heads as used in STUDER professional tape recorders world-wide.



The illustration shows a REVOX stereo sound head side by side with a professional 16 track head for 2 inch wide recording tape.

1. The milled core shell, machined to extreme dimensional accuracy, insures best possible uniformity for each track. Optimal workability of the gap areas guarantees a perfectly in-line gap.
 2. The nonmagnetic gap of a playback head is only 0.08 mil (2 μ m) wide. By comparison, the human hair is 1.5 ... 2.5 mil (40 ... 60 μ m) "thick".
 3. Magnetic core laminations made from high quality magnetic material of high permeability for low conversion losses (minimal noise voltage and low distortion).
 - Long pole pieces for ruler-flat frequency response down to the lowest frequencies.
 - Head shell and magnetic core have closely matched wear characteristics, thus insuring long head-life.
- STUDER REVOX heads are made by adhering to the company's own manufacturing process.



The Revodur all metal heads for recording and playback, the erase head, the infrared tape sensor and the tape guides; all these components are mounted on a rigid diecast frame. The fourth magnetic head is intended to record slide synchronizing pulses (DIA/DHA/FH).

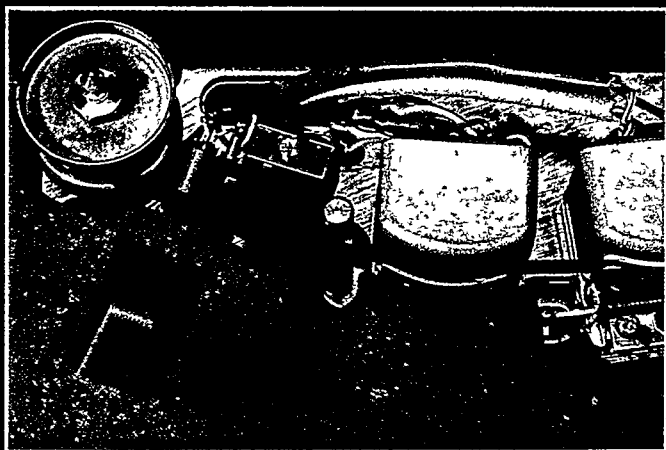
As far as development of magnetic sound heads is concerned, STUDER REVOX is looking back on an experience which equals that of building tape recorders.

Our experts manufacture all metal heads for REVOX tape recorders and for professional sound recorders.

The special alloy Revodur ensures excellent magnetic properties and outstanding wear characteristics. The shape of the head's face is designed to ensure a "ruler flat" response down to the lowest audio frequencies.



The integrated tape cutter makes editing a simple task. An ingeniously conceived edit mode facilitates motor assisted tape shuttling and final manual locating of the exact edit point.



The practical edit facility is standard equipment on each B77 recorder.

By operating the sliding button, the tape is brought into contact with the heads, the playback amplifiers become activated and the fast wind buttons respond only as long as they are held depressed. This facilitates motor assisted searching for the edit point while final tape positioning is then performed manually.

STUDER REVOX – what's behind these names?

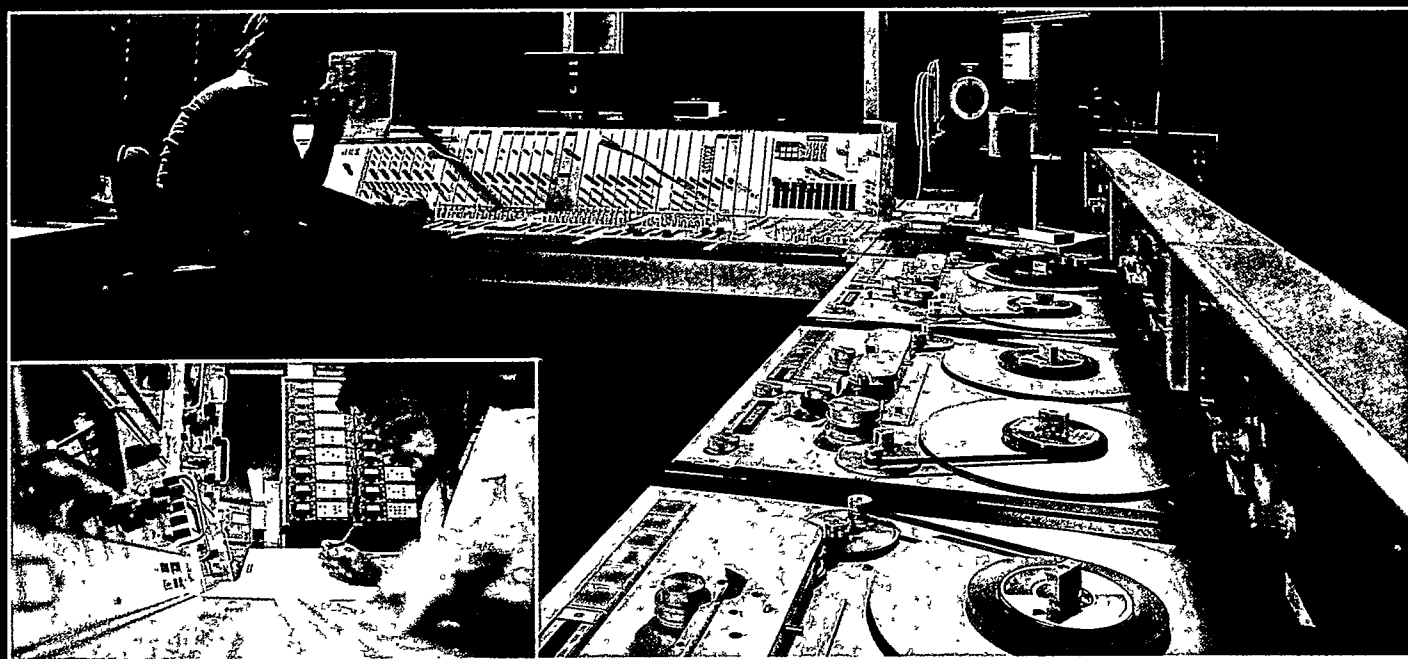
STUDER and REVOX are registered trade marks of the WILLI STUDER AG with headquarters in Regensdorf at the outskirts of Zurich/Switzerland. The number of people employed in the various factories in Switzerland and the nearby Black Forest in Germany totals 1500.



Situated at headquarters in Regensdorf are the research and development departments for all products manufactured by STUDER REVOX. For the audio markets around the globe, the company develops and manufactures high quality equipment which belongs to the following three major categories:

- Professional equipment and systems for broadcasting, television, motion picture- and disc recording studios.
- HiFi-system components for the discriminating audiophile.
- Language laboratory equipment and audiovisual teaching systems for educational purposes and other communication requirements.

STUDER REVOX, headquarters at Regensdorf-Zurich.

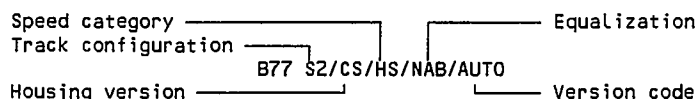


The major products resulting from our research and production activities are:

- Professional magnetic tape recorders with up to 24 tracks recording capacity.
- Complete remote control and synchronizing facilities for multitrack recorders.
- Audio mixing consoles for mobile and stationary use containing up to 32 channels.
- Professional FM-tuners and amplifiers.
- Complete studio installations and remote pick-up vans.
- HiFi-tape recorders, amplifiers, FM-tuners, FM-receiver, turntables and loudspeaker systems.
- Language laboratory equipment.
- Professional cassette decks.

Designation

For easier type identification of the REVOX B77 tape recorder, the following coding scheme has been implemented:



S2 = 2- track CS = Plastic housing, Nextel coated
 S4 = 4- track CM = Metal housing for cabinet mounting
 (19" - rack mounting is available)

An exact definition of the machine type is, therefore, possible by combining the individual code elements.

Track configurations

2- Track (S2):

2- track models are always selected when tape splicing (editing) is required. Because of the large track width of 2mm, these models feature excellent ratings with respect to frequency response and treble dynamic range. The 2- track version can be equipped with slide control electronics and an additional sound head. The high- speed version of the 2- track machine is ideally suited for applications requiring maximum audio quality (e.g. as effects machine in audio or film production).

4- Track (S4):

The advantage of 4- track machines over 2- track machines is the double tape capacity. The 4- track B77 is suited for applications where long playing times (up to six hours on the standard- speed B77) combined with excellent audio quality is essential. The 4- track machines can also be equipped with slide control electronics and an additional soundhead. Because of the narrower track width, the audio specifications are in certain areas slightly inferior to those of 2- track machines.



Standard version of B77 [Standard Speed, 3 3/4 and 7 1/2 ips (9.52 and 19.05 cm/s)]

The REVOX B77 has been designed to satisfy the requirements of a vast number of applications. All machines are constructed from the standard speed version without major changes to the electronics or mechanical components. The flexibility of the B77 and its mature technology are two of the main reasons why the REVOX B77 is frequently used by recording studios side by side with the STUDER multi-channel studio tape machines.

The B77 features an extremely stable 3- motor tape transport which can be adapted easily to individual applications because of its ingenious and top- quality construction. The neat arrangement of the control and audio electronics ensures excellent access to test points and trimmer potentiometers for maintenance work or field modifications to the machine that are required for other applications.

All tape transport functions can be controlled remotely. A cable- type and an IR remote control are available as accessories. Of course, the tape speed can be varied by an implemented control by $\pm 10\%$ or via an external control across a wide range of ± 7 semitones.

Some of the simpler operations can also be performed by unskilled personnel because the controls are arranged for maximum operating convenience and reliability. The logically interlocked tape command keys as well as the record preselection facility (protects against unintentional erasure) also contribute to high operating reliability. With its sophisticated transport and audio electronics, the B77 is a flexible and efficient tape recorder with great application potential in recording, broadcasting, and film studios, as well as in the industry.

The B77 standard speed version [3 3/4 and 7 1/2 ips (9.52 and 19.05 cm/s)] is available as a 2- track or 4- track machine with NAB equalization. Depending on the application, either a rugged plastic housing with Nextel- coating or a metal housing (for cabinet mounting) can be ordered.

B77 HS [High Speed, 7½ and 15 ips (19.05 and 38.1 cm/s)]

The B77 HS is ideal for applications that require maximum frequency response, dynamic range, and treble response. Because of the high tape speed [7½ and 15 ips (19.05 and 38.1 cm/s)], excellent frequency and treble response is achieved. Editing (splicing) is also easier and more accurate with high tape speeds. The B77 HS features the same sophisticated tape transport control as the standard speed model. The tape speed is doubled by increasing the capstan diameter. The B77 HS can, of course, be operated with the same accessories as the standard speed model.

Versions of the B77 HS:

The high speed version [7½ and 15ips (19.05 / 38.1 cm/s)] is particularly suited for semiprofessional use or as a cost-effective alternative for expensive studio machines in smaller recording studios or local broadcasting stations. For this reason, the B77 HS is only available as a 2 track machine with either NAB IEC equalization. The type of equalization to be selected depends on the equalization standard of the existing equipment or the library of recorded tapes.

The B77 HS can also be fitted with an additional soundhead for control purposes (see slide versions).

B77 LS [Low Speed, 1 7/8 and 3 3/4 ips (4.76 and 9.52 cm/s)]

The B77 LS is designed for audio applications where uninterrupted playing times of over 6 hours with excellent reproduce specifications are required. The B77 LS operates at two speeds: 1 7/8 and 3 3/4 ips (4.76 and 9.52 cm/s). The main distinctions to the B77 standard model are the smaller capstan diameter and a corresponding lower capstan motor speed. The B77 LS is available as a 2-track or 4-track machine. Because of its high recording and reproduction quality, the B77 LS is ideal suited for audio applications in museums, exhibitions, galleries, restaurants, or for speech recording during conferences.

Versions of the B77 LS:

The B77 low speed version runs at 1 7/8 and 3 3/4 ips (4.76 and 9.52 cm/s). Depending on the application, either a 2-track or 4-track machine can be selected. If only speech is to be recorded, the 4-track version is recommended because the recording time is twice as long. For recording and reproducing music, the 4-track version is less suited. Equalization according to NAB standards. The B77 LS is available in a Nextel-coated plastic housing or in a metal housing (for cabinet mounting).

B77 SLS [Super Low Speed, 15/16 and 1 7/8 ips (2.38 and 4.76 cm/s)]

At the extremely low recording speed of only 15/16 ips (2.38 cm/s), the uninterrupted running time of the B77 SLS is over 12 hours, i.e. continuous 24-hour operation is possible with only two B77s. Excellent voice intelligibility is achieved because of the high recording quality. The B77 SLS is a high-quality tape machine for voice logging. The second channel can, for example, be used for continuous time recording. The B77 SLS is ideal for continuous logging of conversations in wire-bound and wire-less communication systems.

A special version with the designation B77 AUTO is available for automatic monitoring purposes.

Versions of the B77 SLS:

The superslow B77 SLS runs at 15/16 and 1 7/8 ips (2.38 and 4.76 cm/s). These recorders are available as 2-track or 4-track machines with Nextel-coated plastic housing or metal housing for cabinet mounting).

B77 AUTO (Auto Start)

The B77 AUTO versions are particularly suited for automatic monitoring applications in which sporadic events must be recorded. The standard speed versions are ideal for monitoring functions that require high audio quality. The low speed and particularly the super low speed versions are primarily suited for continuous voice traffic in wire-bound or wireless communication systems. The second track can, for example, be used for synchronous recording of time information.

Autostart recorders are equipped with additional electronic circuits for starting the recorder automatically when a modulation signal becomes available on one or both input channels. The autostart threshold can be adjusted externally. The delay for switching the recorder to stop after the arrival of the last audio event can be adjusted internally.

Versions of the B77 AUTO:

The B77 AUTO is available in standard, low speed, and super low speed versions, either as 2-track or 4-track machines. Standard and low speed recorders use NAB equalization. The B77 AUTO can be ordered with Nextel or metal housing.

Alternate Control (external option) Part. no. 34230

For special applications, such as uninterrupted monitoring, two B77 recorders can be coupled with the aid of the optional "Alternate Control". Thus, two B77 recorders can share one of three preselected functions: PLAY (the second

recorder starts in play mode as soon as the first recorder has terminated its program), RECORD (same as PLAY except that the second recorder starts in record mode), and OFF (both recorders can be operated independently).

Cycle Control (external option) Part no. 34231

A B77 equipped with cycle control does not switch to stop when the end of the tape is reached but rewinds automatically and searches the beginning of the tape. The preselected command (record, play, or stop) will be executed.

Endless operation (e.g. continuous operation in exhibitions, slide shows, etc.) is, therefore, possible. Several B77s equipped with cycle control can be connected like a chain (sequentially, repeating).

B77 with additional pilot tone head

The B77 equipped with additional pilot tone head for control purposes is available in three versions:

- B77 DIA, for controlling a slide projector with the aid of 1kHz control pulses. A cable type remote control is required for this version.
- B77 DHA, for controlling multiple projectors and a dissolve unit.
- B77 FH, for operation with an external electronic control.



B77 DIA (Slide Sync)

The B77 DIA versions are designed for stereo dubbing or presentation of slide shows with superb sound quality and reliability in conjunction with a slide projector. The pulses of the control track can, of course, also be used for triggering other suitable devices and equipment. This recorder features a pilot tone head as well as a slide

sync PCB with control electronics. The connection of different projector types is not critical because the SLIDE SYNC socket is controlled through electrically isolated relay contacts.

Slide sync recorders are available in the standard speed version [3 3/4 and 7 1/2 ips (9.52 and 19.05 cm/s)] as 2-track or 4-track machine with NAB equalization; the HS version as a 2-track machine with either NAB or IEC equalization.

B77 DHA (Dissolve Head Amplifier)

The analog pilot head electronics of the DHA version are not only able to control dissolve units (e.g. SIMDA ED 3000P) for multiple projections, they also open virtually unlimited possibilities because its control signals cover a frequency range of several octaves.

DHA recorders are available in the standard speed version [3 3/4 and 7 1/2 ips (9.52 and 19.05 cm/s)] as a 2-track or 4-track machine with NAB equalization; the HS version as a 2-track machine with either NAB or IEC equalization. DHA recorders can, for example, be used in conjunction with the following systems:

AVL FX-2
 AVL Chipmunk
 Electrosonic ECLIPSE ES 460
 Rollei MD 216
 SIMDA ED 3000P

B77 FH (Free Head)

The "soundhead only" FH versions are designed for operating with external control and switching electronics (e.g. SIMDA F100/101). The control possibilities are only limited by the characteristics of the pilot head, the tape material, and the cross talk to the audio tracks. FH recorders are only equipped with the additional pilot tone head and a screened connecting cable to the REMOTE CONTROL SLIDE SYNC connector.

FH recorders are available in the standard speed version [3 3/4 and 7 1/2 ips (9.52 and 19.05 cm/s)] as 2-track or 4-track machine with NAB equalization; the HS version as a 2-track machine with either NAB or IEC equalization.

FH recorders can be used with following systems (possibly with minor adaptations according to the manufacturer specifications):

AVE (Fading 2), Bassgen (UD 2000), Imatronic (2500), Kindermann (F101), KODAK (Model 8/digital), Leitz (D.U.-24 A), Liesegang (Processor Syn.1), Muewoblend (EC), Rollei (MD 216), SIMDA (4000, F101), Zeiss Ikon (P. Softmatic).