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UHER

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UHER 4000 Report

Open reel tape recorder

The **Report 4000** was a series of portable open-reel magnetic-tape [audio recorders](#), introduced by [UHER](#) in München (Germany) in 1961. It was one of the first truly portable fully transistorised recorders that dominated the professional (broadcast) market for many years. Numerous [variants](#) of this recorder exist, and it was also used by law enforcement agencies and in [espionage trade](#).

The machine measures 270 x 215 x 85 mm and weights 3 kg. It is used with [two open reels](#) with a diameter of 13 cm (5 inch) and has two mono audio tracks. It offers four speeds for recording and play-back: 2.4, 4.75, 9.5 and 19 cm/s, [selectable with a knob](#) at the front top/right.

The Report 4000 is [powered](#) by five 1.5V D-size batteries, that are installed in a compartment that can be accessed via the removable bottom panel. Alternatively the unit can be powered by an external mains transformer, or an internal one that is fitted inside the battery holder.

Due to its excellent price/performance ratio, the UHER 4000 recorders were heavily used in the broadcast and film industry as an affordable alternative to [Nagra](#). The first model of the 4000-range was introduced in 1961 and the machine was in production in [various incarnations](#) until 1966, when it was succeeded by the two-track 4200 and eventually by the 4-track 4400. The machine shown here was purchased by the previous owner in 1965 for DM 450 (EUR 225) ¹ [1].



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1. Conversion to EURO is made without taking inflation into account. The machine was bought with the internal PSU (DM 63) and an accu pack (DM 35) on 17 February 1965 for a total of DM 548.

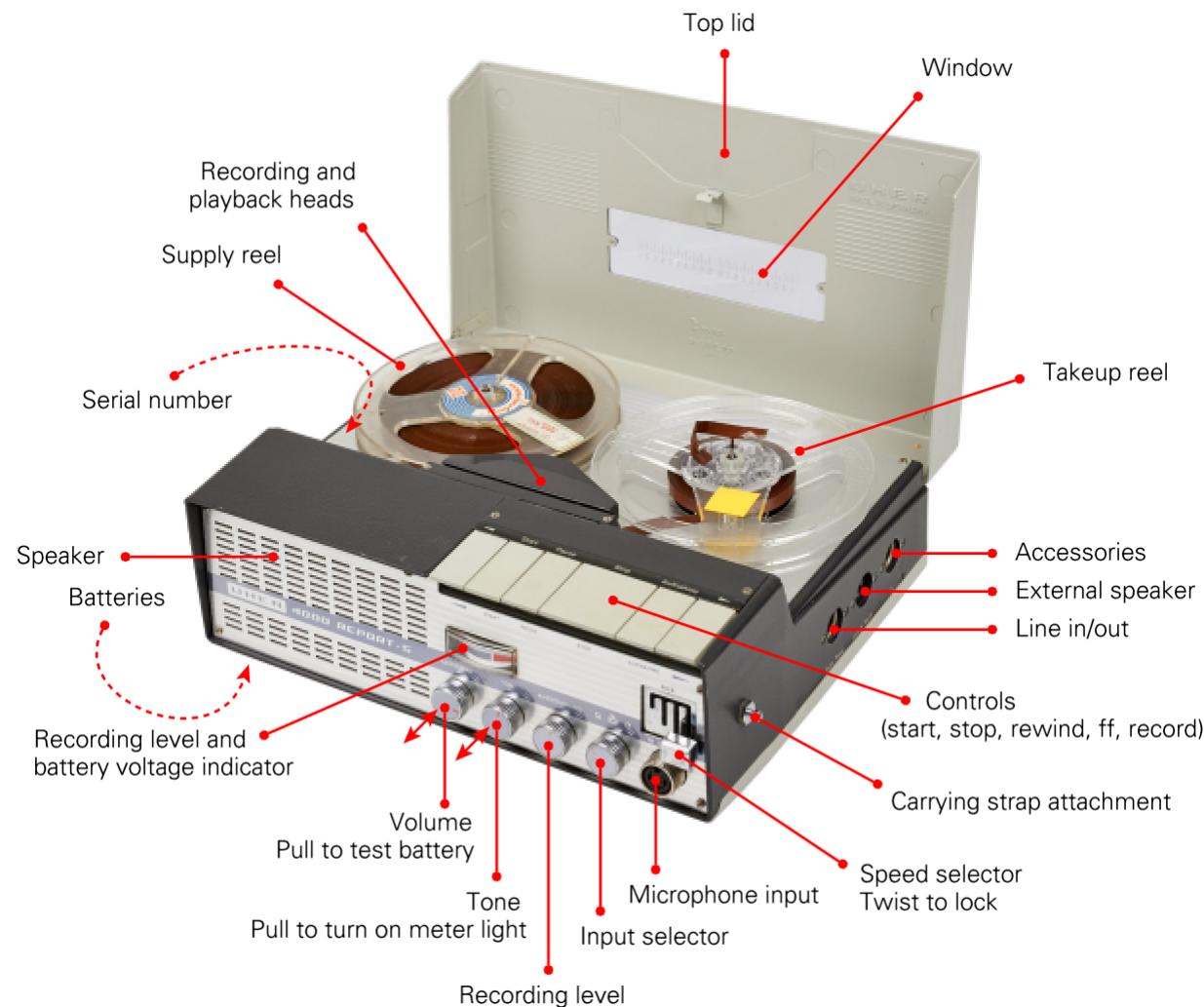


A

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Features

The diagram below gives an overview of the controls and connections on the UHER 4000 Report S. Batteries are installed at the bottom. Alternatively, an internal power supply unit (PSU) can be installed in their place. In addition, an external PSU can be connected to the Accessory socket at the right side. The machine is loaded with a suitable audio tape, using 13 cm (5") spools.



The unit is powered by selecting one of the four speeds with the 'gear' type selector at the top right of the front panel. In the upper position of this selector, the machine is turned OFF. The speed selector can be locked in any position by turning its knob by 90 degrees. All tape controls

are at the front right of the top surface, with the PAUSE switch acting as start/stop during a recording or playback session. Note that this button has to be released by pulling it up.

Both the volume and the tone control have an embedded switch that is activated by pulling the knob towards you. Pulling the volume knob will switch the meter from showing the recording level to the current battery level. Pulling out the tone knob turns on the meter illumination.



B

Other uses

The **UHER Report 4000** was very popular with broadcast reporters, who were able to carry it at the shoulder during an interview, using one of the special [leather carrying bags](#). The device was also used during criminal investigations, for example for tapping phone lines and for recording interrogations, or for covertly recording an important conversation in a room. During the [Cold War](#), it was also used by the former [DDR](#) (East-Germany). Below are some examples of its use.

Dead letter box

In the hands of [Czechoslovak secret services](#) like the [StB](#) and [Správa 1](#), UHER recorders were used as part of a so-called [Electronic Dead Letter Box](#), or [EDLB](#) [2]. It enabled a secret agent to deliver a spoken message at high speed from a driving car, without physical contact with his handler.

For this application, a small transmitter was attached to the side of the recorder.

[► More information](#)



Optical communication

In the 1970s, the intelligence service of the former [DDR](#) – the [Stasi](#) – used the recorder as part of its optical communication system, that enabled [Stasi](#) agents operating in the free West to deliver messages at high speed to [Stasi](#)



Headquarters in East-Germany. This is another example of an [Electronic Dead Letter Box \(EDLB\)](#).

► [More information](#)



Wire-tapping

Later versions of the recorder, such as the UHER Report 4400, were sometimes customised for specific purposes, such as wire-tapping, phone logging and legal or criminal investigations.

One example is the [Trevisan RT-2000](#) shown in the image on the right. It is a 4-channel real time audio recorder with a built-in real-time clock (RTC) and a thermal printer, for logging the metadata.

► [More information](#)



Accessories

Carrying bags

For carrying the UHER Report 4000 around, a number of options were available. First of all, a leather or canvas strap could be attached to the two pins at both sides, close to the front panel.

In addition, a selection of leather carrying bags was available in black or brown, such as the one shown in the image on the right. The recorder can be operated from within the bag, and even the tape is accessible through a flap at the top.



Interior

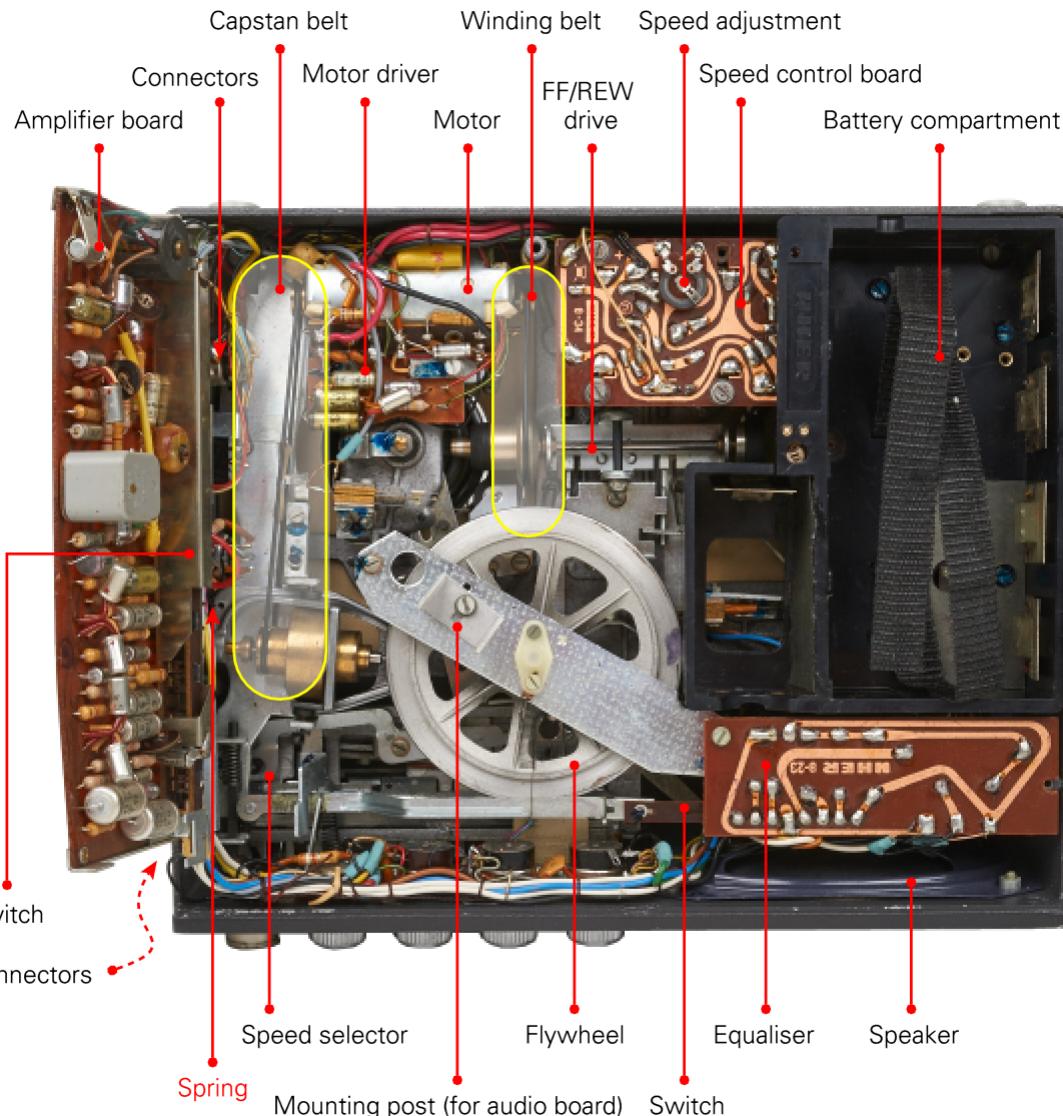
The Report 4000 is very service friendly for its age. The interior can be accessed simply by loosening the large knurled bolt at the bottom and removing the bottom panel. Next, remove the orange carton by releasing the four bolts that keep it in place. The interior is now visible.

The amplifier board at the left is hinged and can be swung away after [loosening a supporting post](#) at the right (on top of the large flywheel assembly at the center). A few smaller PCBs are present with additional circuits, such as the audio amplifier and the motor control circuit.

Note the rather 'messy' [circuit around the motor](#), where a small PCB is fitted to the chassis, with several of its components 'dangling in the air'. Despite this, the recorder is well constructed, both mechanically and electrically, and after 50 years, the one shown here still works a treat.

When restoring an old UHER 4000 recorder, one of the first things to check are the rubber belts. In some machines the rubber may have become 'liquid' or may have disintegrated completely. But even if the belts seem fine, they will probably need to be replaced after so many service years.





The 4000 Report-S has two different belts: one for driving the capstan and one for winding. Later models had three belts: the extra one was used to drive a counter that was fitted at the front panel. Replacing the belts is easy and good replacements are available from several sources [4]. Note that when replacing the capstan belt (left) the spring at the left of the assembly (marked above in red) should be removed temporarily. This can be tricky and requires a spring-hook.



Power source

- 5 x 1.5V D-size battery
- Rechargeable gel battery
- Internal PSU (installed in battery compartment)
- External PSU (fitted to accessory socket)

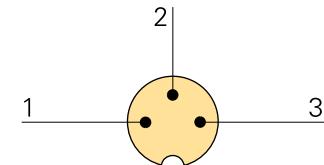
Connections

The UHER 4000 Report has three sockets at its [right side](#). The middle one is for connection of an external speaker or a pair of headphones. The leftmost one is the line input/output and the rightmost one is the accessory socket. The pinout of the latter two sockets is as follows:

Audio

This is the (mono) phono/radio socket of the UHER recorder. It carries both input and output signals at line-level, using the [standard 3-pin DIN layout](#). Pinout looking into the socket:

1. Line in
2. Ground (chassis)
3. Line out



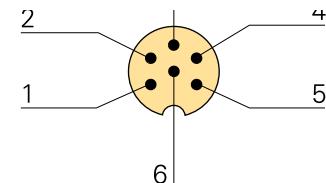
Power

This is the accessory socket. It can be used for a remote control (foot switch) or an external 7.5V DC power source. Alternatively, the 7.5V line can also be used as an output (e.g. to power a peripheral device). Note that the recorder has the (+) terminal of the battery connected to the chassis. This means that the circuit is powered by -7.5V. The socket has a built-in switch that disconnects the battery when a plug is inserted. Pinout when looking into the socket:

1. ?

- 3

- 2. Audio (line out)
- 3. Ground (7.5V battery +)
- 4. Remote
- 5. Charge
- 6. Power (7.5V battery -)



Versions

- Report 4000 1961-1962
- Report 4000 S 1963-1965
- Report 4000 IC 1972-1975
- Report 4000 L 1965-1966

Models

- 1000 Professional version of 4000
- 4000 2-track mono (later 4-track mono)
- 4200 2-track stereo (tape used in one direction)
- 4400 4-track stereo (double sided, also usable as 4-track mono)

Documentation

- A. [UHER, UHER 4000/4200/4400 Report Monitor, Service Handbook](#)
Without circuit diagrams. Date unknown. ¹
- B. [UHER, UHER 4000 Report-L, Model 4200 and 4400 Supplement](#)
With full circuit diagram. Date unknown. ¹
- C. [UHER, UHER 4000 Report-L and Report-S, Parts List](#)
Date unknown. ¹
- D. [UHER, UHER 4000 Report-L, Circuit Diagram](#)
Date unknown. ¹
- E. [UHER, UHER 4000/4200/4400 Report-IC and Stereo IC, Service Manual](#)
Complete with circuit diagrams. Date unknown. ¹
- F. [UHER, UHER 4000 Report IC, Circuit Diagram](#)
Date unknown. ¹

1. Via website HiFi Engine www.hifiengine.com

References

1. [Elektro-Export Aksur, Original invoice for Uher 4000-S](#)
Frankfurt am Main. 17 February 1965.
2. [Anonymous, Use of UHER Report 4000 by Czechoslovakian secret services](#)
Interview by Crypto Museum, June 2015.
3. [UHER Report 4000 IC, Technical description with circuit diagram](#)
March 1963. Website HiFi Engine. Retrieved April 2015.
4. [Erwin Bosch Trading, UHER 4000/4200/4400 Report – replacement belts](#)
Via eBay. Received August 2015.

Further information

- Other UHER recorders
- The Czechoslovakian electronic dead letter box
- Other Czechoslovakian spy equipment
- Radio Trevisan RT-2000

- Other dead letter boxes
- Other covert recorders

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