



Thomas RECORDING GmbH

„We have the solution!“

Eckhorn Matrix System

Product Features



- Axial resolution better than $1\mu\text{m}$, x-y-Positioning with a grid and special holder
- Patented rubber-tube drive, no hysteresis, slick or free motion due to patented rubber tube drive (avoids drawbacks of cable, direct or hydraulic driven systems)
- Electrode travel range up to $24.000\mu\text{m}$
- Variable speed range from $0\text{...}250\mu\text{m/s}$, higher velocity on request
- 7- and 16- channel Version available
- 28 or 64 channel Tetrode Versions available
- 49 or 112 channel Heptode Versions available
- No electrode connection cables free in air! Complete metal shield around all microelectrodes
- Suitable for cortical and deep brain recordings
- Very close electrode spacing available (down to $80\mu\text{m}$)
- Different electrode arrangements available (linear, concentric, etc.)
- Integrated low noise preamplifiers

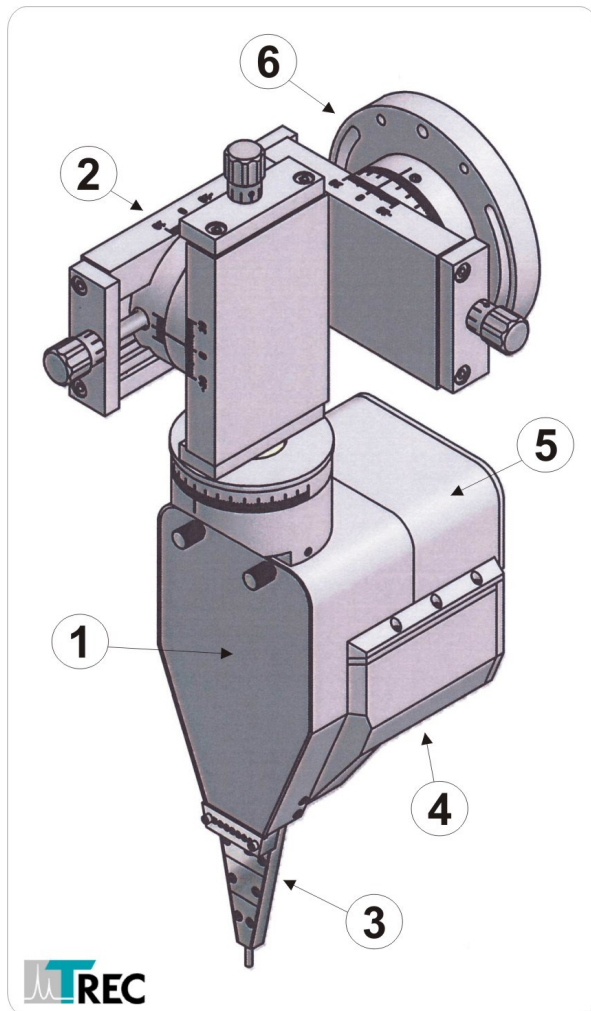
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GERMANY

Certified
ISO 9001  TÜV Rheinland®
Precisely Right

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Innovative Products for Neurophysiology

The **Eckhorn Matrix Systems** are available in 1-, 3-, 7- and 16- single microelectrode configurations. Figure 1 shows a 7 electrode **Eckhorn Matrix system** with the following features: (1) Eckhorn Matrix chassis with closed cover, (2) Xyz-manipulator, (3) exchangeable microdrive head for different electrode configurations (e.g. linear, concentric, etc.), (4) multichannel preamplifier integrated in the Microdrive chassis, (5) Micro-motor cabinet, integrated in the microdrive chassis, (6) mounting base plate to mount the microdrive to stereotaxic instruments. The microdrive is equipped with the patented Thomas rubber tube drive that avoids positioning errors well known from other microdrive systems [1].



The **Eckhorn matrix** has an integrated low noise preamplifier. The microelectrodes are shielded by the microdrive chassis so that there is no electrical noise pickup from the environment.

Different electrode configurations are realized by an exchangeable microdrive head. Very close electrode spacings are possible (down to 80µm). The **Eckhorn Matrix** is well suited for cortical and also for deep brain recordings. The electrode travel distance is up to 40mm, other travel distance on request!

An **Eckhorn Matrix System** is delivered completely with microprocessor motor control unit, software, multichannel preamplifier, xyz-manipulator, and a set of microelectrodes.

[1] Eckhorn R, Thomas U (1993) A new method for the insertion of multiple microprobes into neural and muscular tissue, including fiber electrodes, fine wires, needles and micro-sensors. J Neurosci Methods 49:175-179.