

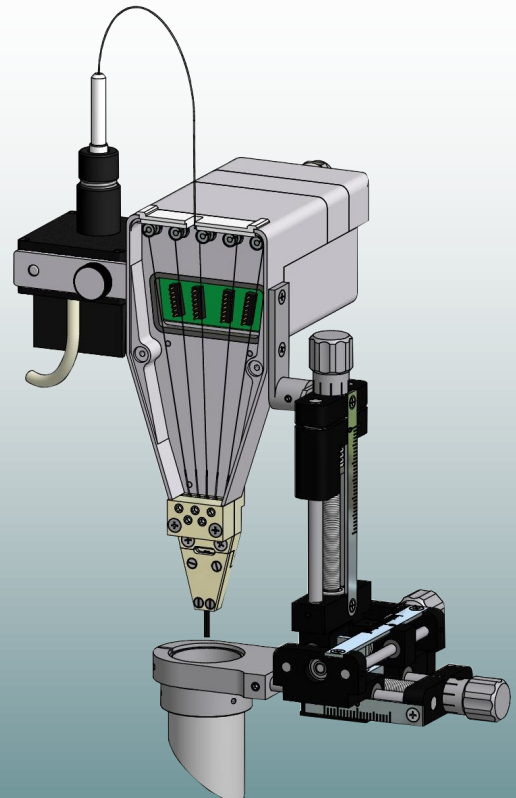
**NEW**

 Made in  
GERMANY

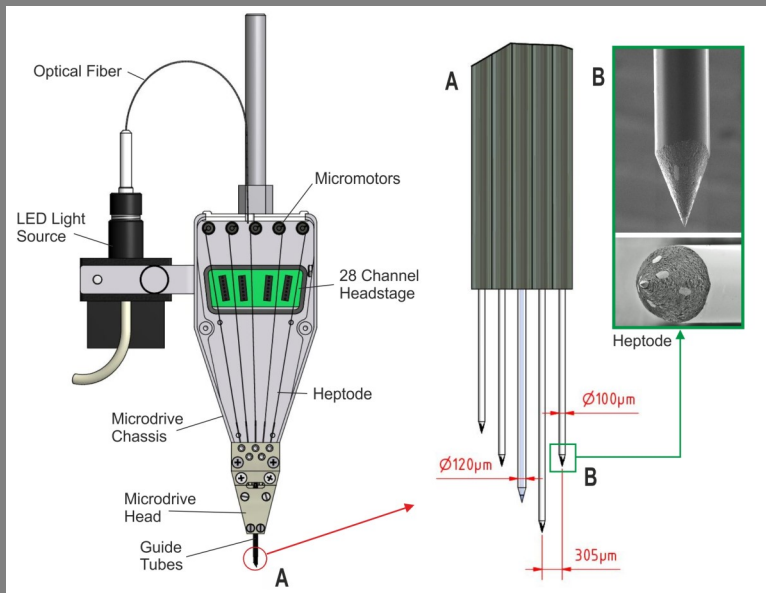
**Thomas Mini Matrix<sup>©</sup>**

## 32 Channel Thomas Mini Matrix<sup>©</sup>

- 32 Recording/Stimulation Channels
- Microinjection or optical Stimulation
- Data Acquisition System integrated
- For NHP and rodents
- 3D-Macro- and Micronavigation
- 3D-Reconstruction of neural Network  
(coming soon)
- Autonomous Electrode Positioning  
(coming soon)



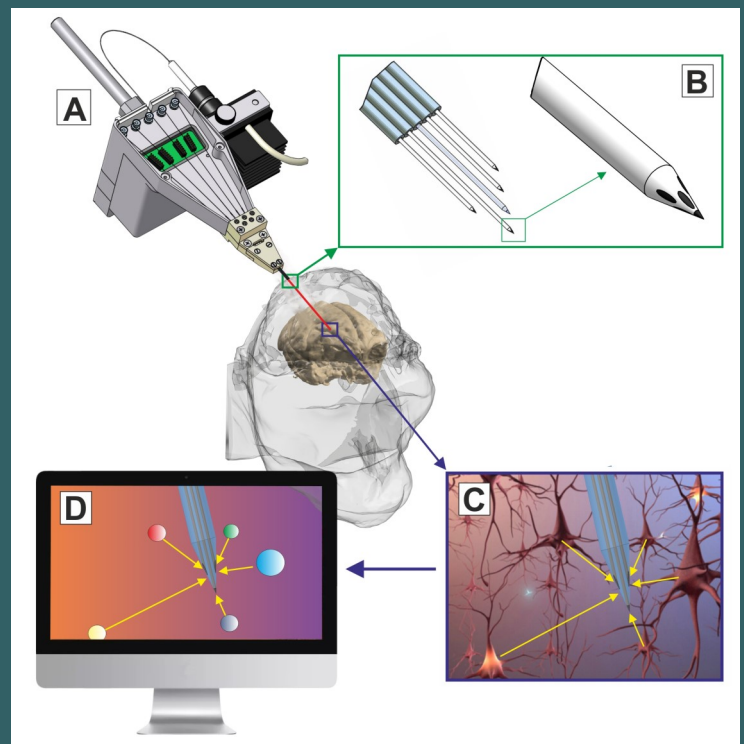
[www.ThomasRECORDING.com](http://www.ThomasRECORDING.com) - [info@ThomasRECORDING.com](mailto:info@ThomasRECORDING.com)



The new Thomas Mini Matrix is a microdrive system using the **patented Thomas rubber tube drive** to move up to 4 **heptodes** (7 channel fiber microelectrode, outer diameter 100µm) and 1 **tetrode** independently from each other to different depths of the brain. With a travel distance of up to 24-30mm (larger travel distances on request) this allows **cortical as well as deep brain recordings**. Beside the heptodes one can load an additional injection pipette, an optical fiber or an electrical stimulation electrode and move it like the heptodes, computer controlled into the brain target under investigation. The axial resolution is 1µm which allows a precise micronavigation through the target. Macronavigation is done by an additional feature of the Thomas Mini Matrix: An optional available **3D-neuronavigation software**. This 3D-neuronavigation software transfers individual animal's images, yielded by pre-experimental CT or MRI scans, onto the experimental field to assist the neuroscientist intraexperimentally in defining entry points and trajectories for the recording electrodes and identifying the exact position of the brain target area of interest. Extracellular recording from up to 4 heptode contacts (32 channels) is possible while the heptodes are moving slowly through the recording target.

Beside the aforementioned specifications there are two additional features currently under development which will be optional available soon.

An **autonomous electrode positioning** algorithm will allow to place the 4 recording electrodes automatically and readjusts the recording position if required. Based on the recorded neural signals from the close environment of the recording heptode tip (B) we plan to **reconstruct the network of active neurons** on the computer screen (C-D). Imagine being able to inject a drug using the Thomas Mini Matrix (A) and to view the reaction of the neural network directly on the computer screen (D).



**Thomas Mini Matrix<sup>©</sup>** - the world's smallest motorized microdrive with 32 recording/stimulation channels for neuroscience research

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