A Brief Overview of MAG & More GmbH  
Our Philosophy on Creating Innovative, High Quality Solutions

MAG & More has been involved in the field of magnetic neurostimulation for more than 15 years. We have fundamentally taken part in the development of strong and reliable stimulators as well as in the design of new stimulation coils. This experience has given us comprehensive knowledge to answer the needs of our customers in the field of magnetic stimulation.

Our focus lies on creating innovative products which fulfil the highest quality standard. We are truly committed to guarantee the satisfaction of our customers with the quality, functionality and technology of our products and hence we provide our customer with service packages that offer the right solution for their individual requirements.

Behind these innovative products, highly experienced and motivated people are working with a great team spirit to fulfill the needs of our international customers. Our offices and the manufacturing site are located in Bavaria, Germany. It is here that we continually develop modern concepts for stimulation devices, coils and other technologies that meet the newest demand in neurological research.

Products „Made in Germany“

MAG & MORE GmbH  
Magnetic and Life Science Systems
**Functionalities**

The increasing use of transcranial magnetic stimulation (TMS) in medicine requires individual and precise positioning of the TMS coil at the selected brain region. The PowerMAG View! 3D neuro-navigation system visualises the electromagnetic hot-spot of the coil at an individual, anatomical data record. This enables the TMS system to stimulate the target with great precision. The PowerMAG View! combines functionality with simple handling. The result: Intuitive positioning with superb precision and reproducibility.

- Intuitive operability
- Navigation of the coil positioning
- Reproducibility
- Integrated documentation

**REGISTRATION POINTS OF THE COIL**

**TMS COIL**

**HOT-SPOT OF THE COIL**

**REGISTRATION POINTS OF THE HEAD**

**INDIVIDUAL DATA RECORD**

**Infrared Camera**

The PowerMAG View! TMS navigation system uses infrared impulses in order to localize stimulation points. Its system is composed of an infrared camera system which is focused both on the head of the patient as well as the stimulation coil; the infrared signals are reflected back to the camera by the previously positioned unique markers/reflectors. This results in a highly precise 3D model of the head to coil positioning. Depending on the utilized camera type, this positioning is sampled 20 to 50 times per second.
The neuronavigation software PowerMAG View! makes the precise positioning of the TMS coil possible!
Combination of navigation and TMS

The PowerMAG View! neuro-navigation system is part of the PowerMAG product family and is precisely tailored to use with the PowerMAG stimulators. The integrated system offers our customers the advantage of a significant reduction in installation expenditure and support from a single source, in contrast to external navigation systems.

The navigation system is completely integrated into the TMS device trolley - the flexible articulated arm enables optimum alignment of the camera. Coils were developed exclusively for the PowerMAG View!, which incorporate multiple navigation points in their housings. This dramatically simplifies the co-registration of the coil and pushes the precision of the navigated TMS to its peak.

**FLEXIBLE ARTICULATED ARM**
**INFRARED CAMERA**
**POWERMAG VIEW! NAVIGATION SOFTWARE**
**INDIVIDUAL DATA RECORD**
**TRACKER AND POINTER**
**COIL WITH NAVIGATION POINTS**
**TROLLEY**
**POWERMAG rTMS**
Medical PC
All of the calculations necessary for the navigation system are carried out in our powerful PC. This PC system fulfils the strict requirements of medical legislation. In conjunction with our LCD screen, this represents a secure equipment combination in medical technology.

Foot Switch Reader
The foot switch reader offers the ability to connect a foot switch to a navigation system PC as an input device via the USB interface. In addition, the foot switch can be linked to a stimulator so that each stimulation can be immediately registered in the PC during the stimulation process.

Foot Pedal
A double foot pedal for PowerMAG View! simplifies your work with the navigation system. The various actions, e.g. confirmation of the reference point, can be carried out in the navigation software by actuating the switch.

Infrared Cameras:
Polaris Spectra & Polaris Vicra

Measurement volume
Passive Polaris Spectra
& Polaris Vicra

The precision is achieved through the high resolution of the camera. The camera sends infrared signals that are then reflected by the tracker and received by the camera. Next the camera measures the three-dimensional information from the tracker in the sub-millimetre range, in real-time.

We offer two camera variants depending on requirements. Polaris Spectra and Polaris Vicra. The Polaris Spectra is the larger variant, with a larger measurement volume and a faster update rate.

In comparison to the Spectra, the Polaris Vicra has both smaller dimensions and is lighter thus requiring less space.
Tracker, Marker und Pointer

Trackers are elementary components for the co-registration of the coil and the head. Two Trackers with different characteristics are attached to both the coil and the head. While using multiple TMS coils trackers with different geometries are attached. Thus the coils and the head are recorded and differentiated from one another in the coordinate system of the navigation system.

The markers mounted on the trackers reflect the infrared signal transmitted by the camera. This signal is again received by the camera and from this the system calculates the exact positions in space. This technology has the advantage that the tracker is fully free to move as a result of the wireless design. Furthermore, trackers and markers have no electronic parts that could be impaired by the TMS itself.

A pointer is required for the co-registration of head and coil. This pointer is a special form of marker with which the reference points on the coil and the head can be sampled in order to define their exact positions. A highest degree of precision in the trackers, pointers and markers is a prerequisite for precise navigation results.

The head and coil are registered in the navigation system with the pointer. 3 navigation points (right illustration) are used to register the head. 4 points (left illustration) are used to register the coil.

In order to record multiple coils simultaneously in the navigation system, trackers with differing geometries are required.
Fastenings for the trackers
MAG & More offers suitable fastenings which enable a simple attachment of the tracker to the coil or the head cap. The ball joint of the coil fastening enables optimum alignment of the tracker to the camera. A second tracker fastening is also included which can easily be clipped onto a head cap.
The step-by-step assistant utilizes an intuitive user interface which allows you to start with the TMS navigation without complications.

**User-friendly**

The user interface of the PowerMAG View! user software is designed so intuitively that you can start with the navigation of the TMS quickly and simply. Intelligent and powerful algorithms such as the fully automatic head and brain segmentation or surface reconstruction, facilitate the handling of the raw MR data and accelerate the process through to the start of the TMS navigation.

**Compatibility**

A great advantage of the PowerMAG View! software is that it is compatible with other external software, such as BrainVoyager. For example, the fMRI Analysis is a helpful facility to show active regions of the brain, colour-coded. This data can be imported into PowerMAG View!. Providing a precise overview of the stimulation target. You can certainly contact us directly with any questions regarding the compatibility of the software.

**Positioning / Setup**

The PowerMAG View! simplifies the positioning of the components. The camera window with markers and pointer shown, enables quick checking of the correct setup. Checking and correction is possible at any time.
Targeting

The positioning of the target marker is simply implemented by clicking on the desired position in the 3D brain model. You can also enter the stimulation target manually, determined either in the APC coordinate system or in Talairach space. The interactive display of the software shows both the distance to the target and the orientation angle of the coil relative to the desired position. This enables you to work more accurately and faster than ever before.
Visualisation

The PowerMAG View neuronavigation visualises the working area of the coil with an individual, anatomical 3D data record, in real-time. Various different types of coil displays (3D model, transparent frame model) as well as head and brain models (3D models, semi-transparent 3D model, transparent frame model) can be selected for intuitive positioning of the coil. Functionalities such as turning, tilting, sliding, zooming and sagittal, transversal and coronal sections of the head and brain model are likewise fundamental parts of PowerMAG View!

Individual colour settings for the working environment assist the user to identify important information such as contrast.

The conventional 3D view (sag, cor, tra) of the MR tomography is likewise available at any time. The views can be exported as images at any time for documentation or for training purposes.

SAGITTAL SECTION 1
TRANSVERSAL SECTION 2
CORONAL SECTION 3
Service

Thanks to its open design, PowerMAG View! is compatible with various different TMS devices from other manufacturers. If you plan to incorporate your TMS device into the PowerMAG View! navigation system, we are happy to provide support.

MAG & More offers the integrated system solution 3D navigation and TMS system from a single source - we distribute our products and support you directly through the German manufacturer. When you buy a MAG & More PowerMAG device, you benefit from our many attractive services.

Technical Support

The device installation and introduction is carried out by trained specialists and should ensure the proper handover and smooth operation of the device. In addition to technical installation and commissioning, the introduction also covers the following: Safety instructions and warnings, contraindications, side-effects, device functions, practical demonstrations and technical data.

User Training

We offer customised training programmes for our customers, in order for them to be able to get the best from our products and to design the everyday investigation and therapy as simply and efficiently as possible. In order to minimise your costs as far as possible, we would also be delighted to carry out the training at your site. The content of the training stretches from the stimulation process, positioning strategies through to the acceptance of the safety-related checking.

Financing

Alongside the classical purchase we are also prepared to offer you attractive options towards leasing or hire-purchasing our devices. Our finance partner will be happy to put together an offer tailored to your requirements. Aside from the liquidity advantage, these options also supply you with planning security and flexibility. Just get in touch with us!
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Your specialist for magnetic neurostimulation
and 3D navigation

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