



Intraoperative Neuromonitoring
Functional Neurosurgery
Pain Treatment
Neurological Diagnostics

Stereotactic Systems

>> APPLICATIONS

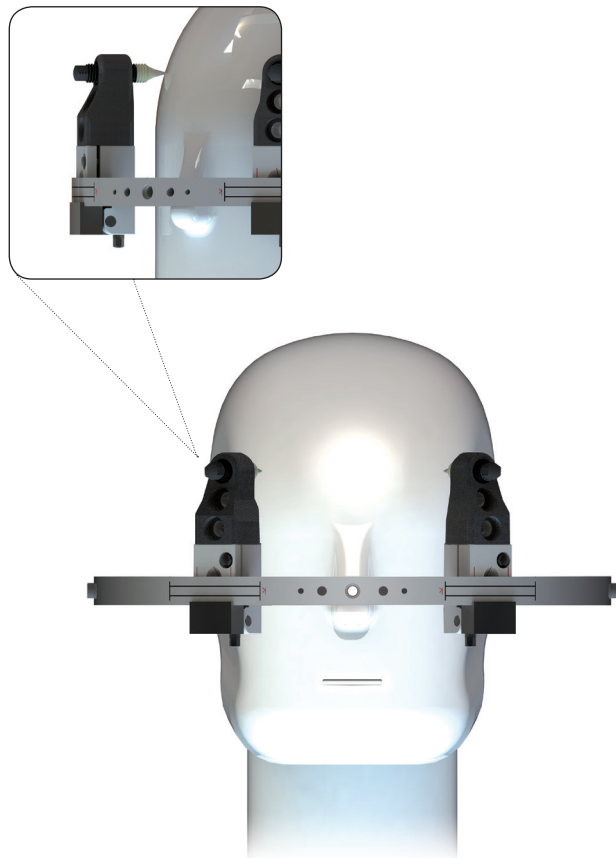
Stereotactic Target Point Planning
Biopsy Planning
Deep Brain Stimulation



Superior Medical technology: inomed Functional Neurosurgery products. High quality precision products from inomed ensure that tissue trauma is significantly reduced during sensitive surgical procedures. Using inomed products hospitals and clinics are able to deliver the gold standard treatment in the field of Functional Neurosurgery.

1 | Fixation

> Stereotactic Ring

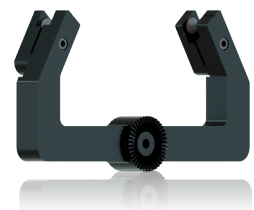


inomed offers a complete system approach, including a wide range of fixation options that enables a precision connectivity solution to be realised.

A successful stereotactic procedure requires a solid foundation. The inomed stereotactic ring provides the foundation for all the precision components required to perform minimally invasive surgery.



>> Mayfield clamp



The inomed Mayfield clamp affixes the stereotactic system to the operating table and ensures a safe, robust fixation. Due to the standardised Mayfield attachment, every operating table with a Mayfield clamp can use an inomed stereotactic system.

>> Quick and safe assembly



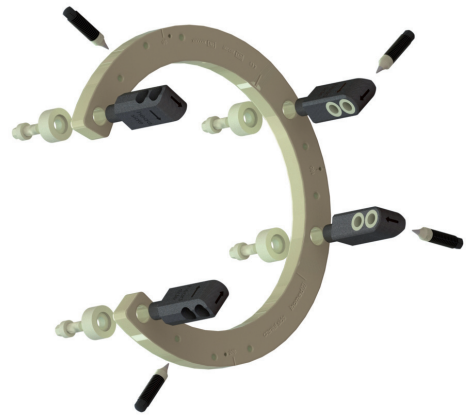
An assortment of different lengths of OptiPins guarantees a suitable fixation for all cranium sizes.



The post holders used for the fixation of the titanium ring offer a flexible position for the OptiPins.



The post holders used for the fixation at the ceramic ring are made entirely of carbon fiber and are therefore completely artifact free for MRI and CT scans.



>> Ceramic Ring

The inomed ceramic ring guarantees zero interference and zero artifacts for the MRI. The half-open ceramic ring minimises the stress for the patient during an awake-surgical procedure. The patient's visual field is not interrupted by the ring. This helps reduce patient anxiety furthermore a respiratory mask can be applied without restrictions.

>> Titanium Ring

The titanium stereotactic ring offers an ideal balance between stability and lightweight construction. And the ring is artifact free in the MRI.

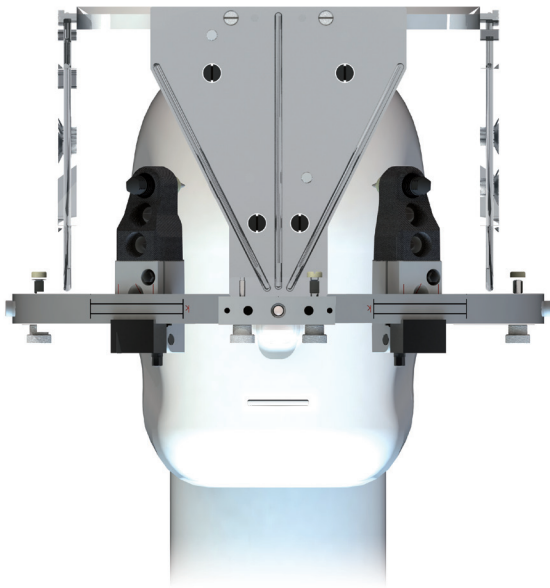
Compared to the ceramic ring, the titanium ring is significantly lighter in weight.



Methodical planning of a procedure is essential for a safe and effective surgical outcome. The use of the inomed iPS planning software is the very first step in the preparation of the surgical intervention. Neurosurgeons devote substantial time to plan a procedure to help ensure a successful patient outcome.

2. | Planning

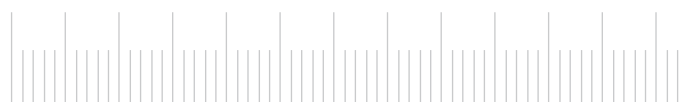
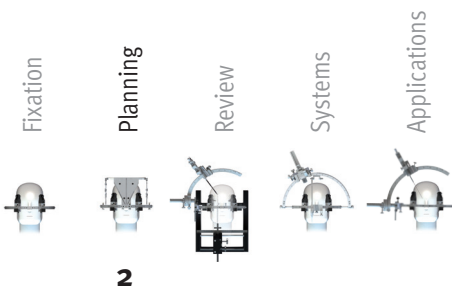
> IPS Planning software and localization set

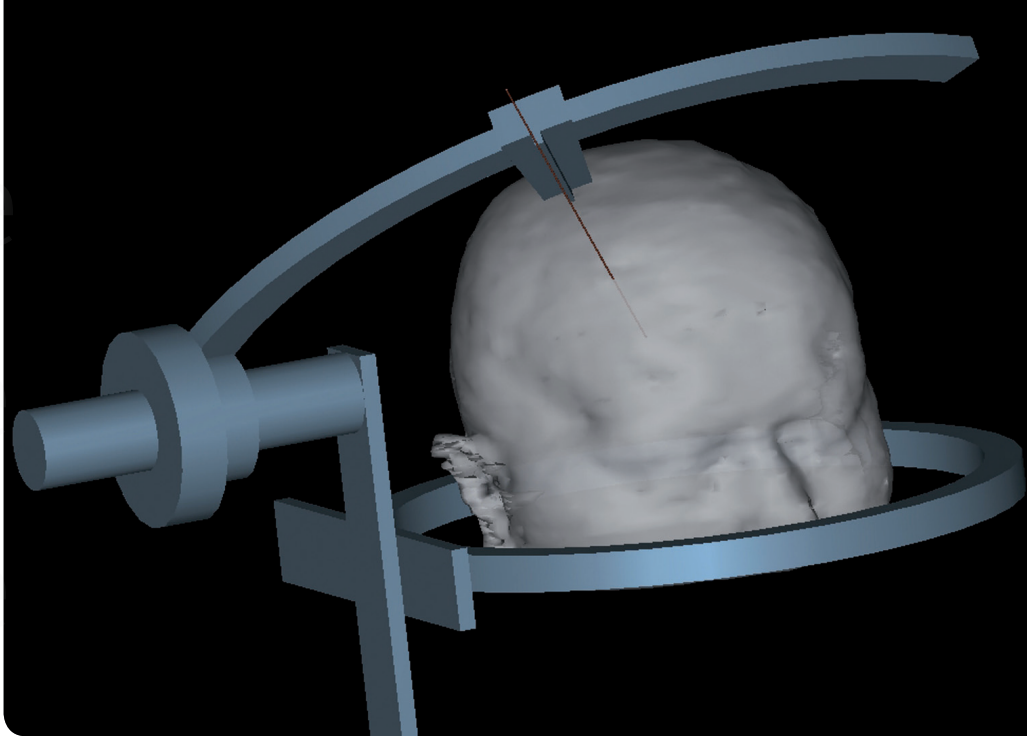


To ensure precise calculation of the target coordinates reliable localization systems are necessary.

Due to the design of the inomed localization set, bracing of the plates is avoided and a credible and constant quality of the image data can be guaranteed. The new generation of the localization set is designed for consistency in CT and MRI applications. The modular design supports temporary removal of individual plates during complex procedures.

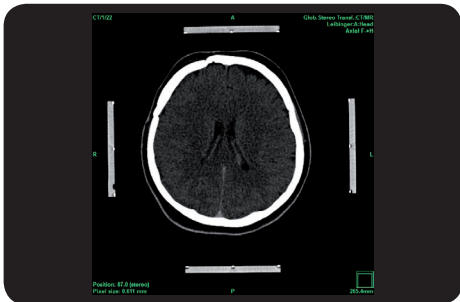
The localization set is available for x-ray, CT and MRI applications. It is completely artifact free.





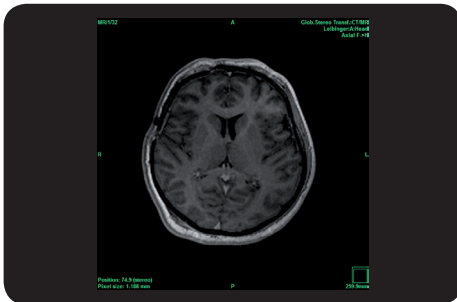
inomed iPS planning software is designed for all stereotactic treatments and compatible with most frames. The 3D software is characterised by precision-combination, high quality imaging and fusion. Optional anatomical atlases can be projected over patient-related data. This enables verification on the basis of anatomical information. After finalising planning the calculated coordinates are transmitted to the stereotactic system and a precise and safe surgery is possible.

>> Fusion applied to CT and MRI images



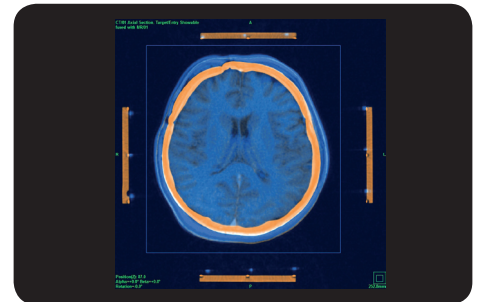
CT-image with localisers

The core function of iPS is the automated matching of varied image modalities. This illustration shows a fusion of CT- and MRI-images.



MRI-image

In the CT image, the localisation plates are easily recognisable whereas no stereotactic localisation information is necessary in the MRI-image.



Fusion

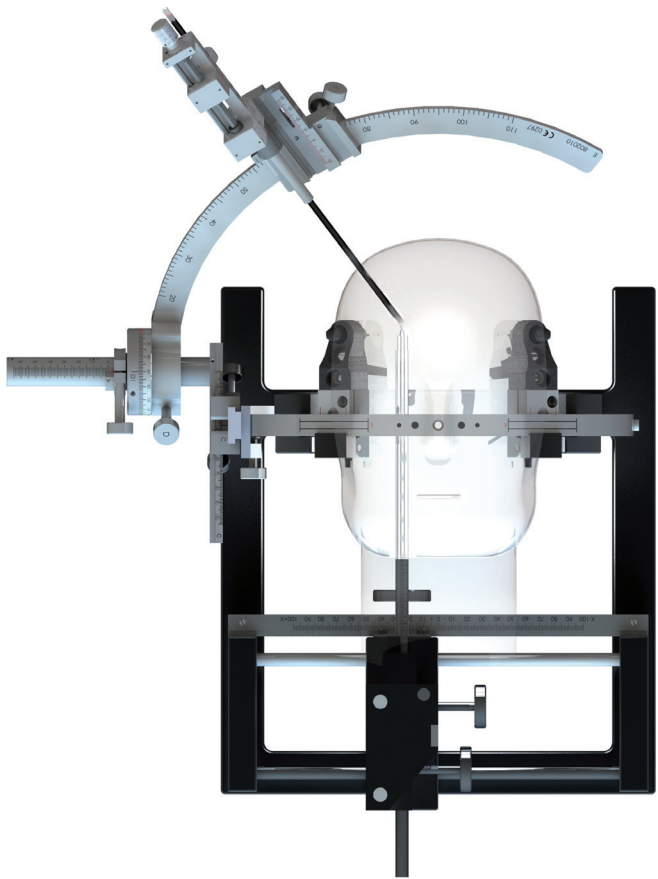
Due to image fusion the stereotactic coordinates of the CT-image are verified and validated for the MRI-image.

Functional Neurosurgery does not tolerate errors.

The use of simulation techniques mean that slightest inaccuracy of the settings or damage to the instruments are no longer incalculable risks but preventable incidents.

3 | Review

> Target point simulator



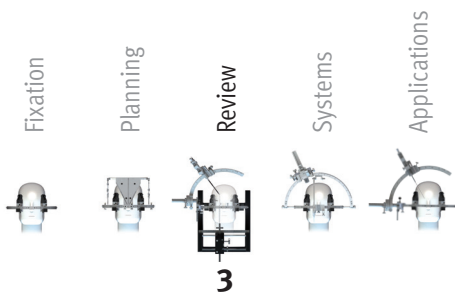
X- value

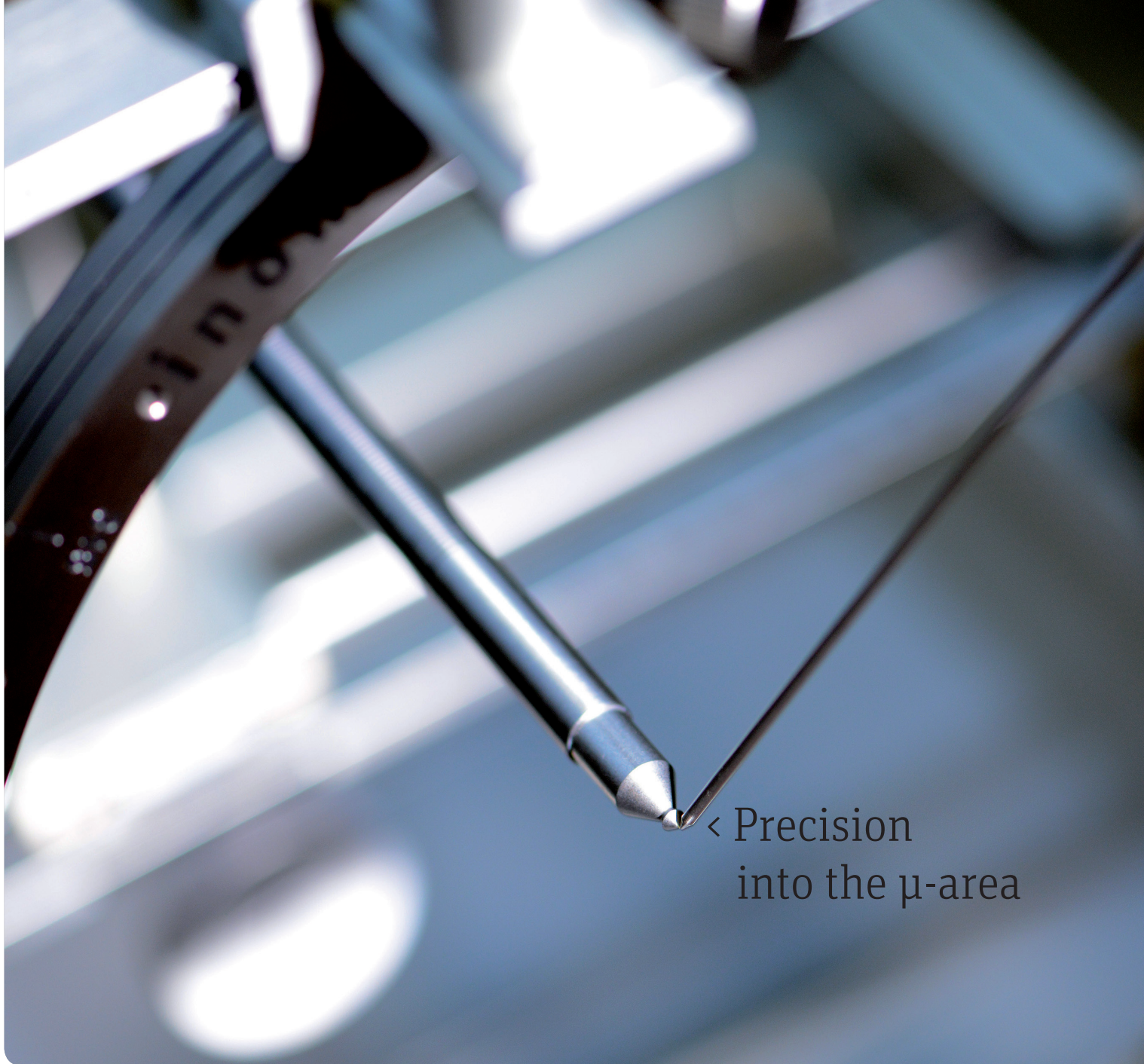


Y- value



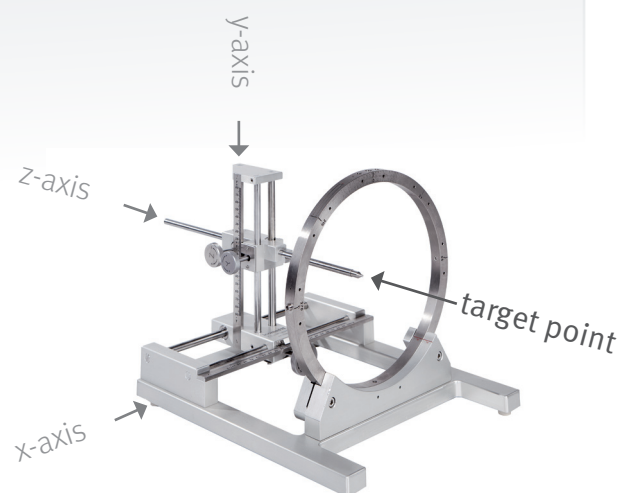
Z- value





< Precision
into the μ -area

The simulation of the stereotactic procedure with the inomed target point simulator enables a clinician to verify the method and instruments with an accurate representation of the target point. Surgical planning with the iPS planning software provides coordinates that can accurately and easily be transferred onto the target point simulator. The ability to rehearse the procedure with the target point simulator provides verification and the highest levels of patient safety.





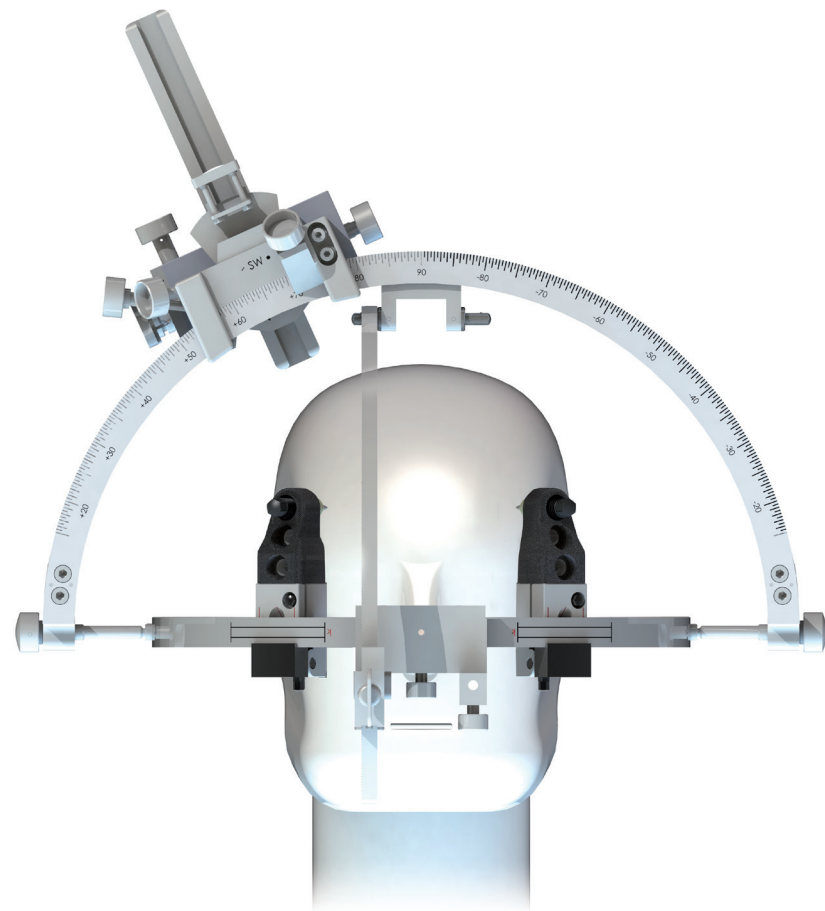
X- value

Y- value

Z- value

4 | Systems

> RM System



>> High stability and precision

The RM-System offers a 3-point-fixation based on the polar coordinate system. Professor Traugott Riechert and Professor Fritz Mundinger (Freiburg) developed a precision mechanical system with an aiming bow that can be used simultaneously as a probe holder. A large variety of accessories create numerous possibilities and permit universal application in the field of stereotaxy.

The inomed RM-System is one of the most precise target point systems and was developed especially for stereotactic surgeries in the field of functional neurosurgery. The equipment for brachytherapy can be adapted easily.

Fixation



Planning



Review



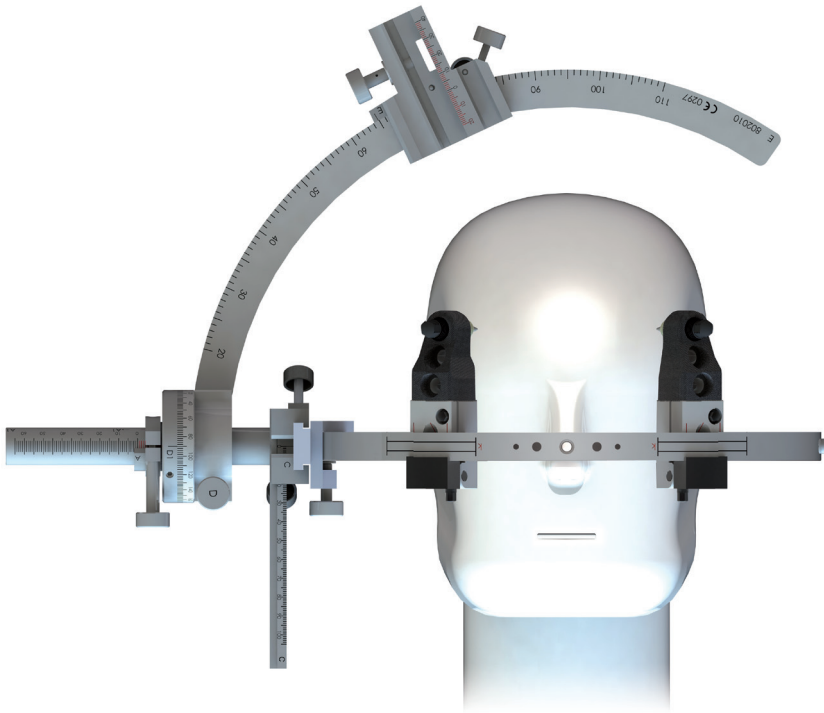
Systems



Applications



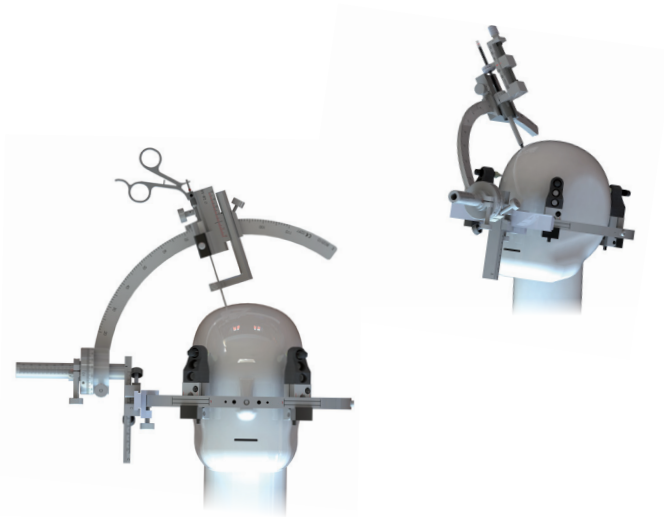
> ZD System



The stereotactic system named after Zamorano-Duchovny (ZD-System) is an easy-to-handle, stable and precision engineered product. This type of a single point-fixation device is proven worldwide in numerous neurosurgical centers.

Based on the Center-of-arc principle the method ensures nearly unlimited access to all intracranial regions - and free choice of the trepanation point.

Depending on the surgeon's needs and preference, inomed's RM- and ZD-systems are the preferred choices for biopsy and deep brain stimulation. inomed also offers a Microdrive and accessories for use with RM and ZD frames. The inomed Microdrive is compatible with most other Stereotactic frames on the market.

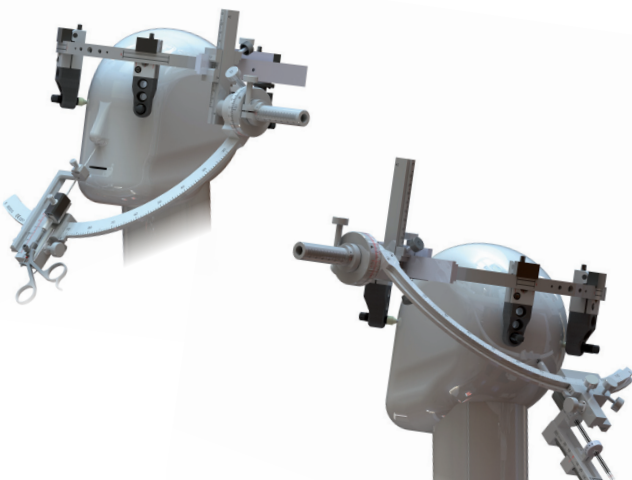


>> Freedom in alignment – the center-of-arc

Up to 8 different mounting possibilities on the ring offer a maximum variability for the selection of the target- and access point.

>> Easy handling via one-point-fixation

The one-point-fixation feature enables the surgeon to transition quickly between target point review and surgery.



Functional Neurosurgery requires more than sensitivity – it requires a highly developed haptic perception.

Instruments and equipment intended as extensions to the surgeon's hands requires reliable technology with precise functionality.

5 | Applications

> Deep Brain Stimulation

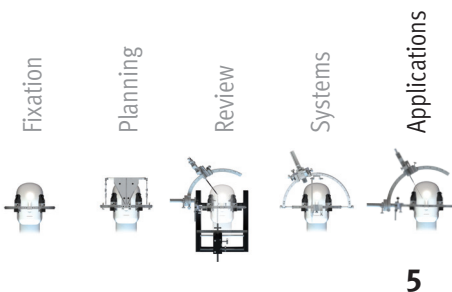
A systematic approach to deep brain stimulation procedures is essential.

The MicroDrive with its depth stops guarantees that electrodes and guide tubes cannot be incorrectly mounted. After each complete turn of the MicroDrive handle, the surgeon/neurologist receives haptic feedback ("click"). The inomed ISIS MER system is a high quality and easy to use system for micro-electrode-recording and target point localisation.



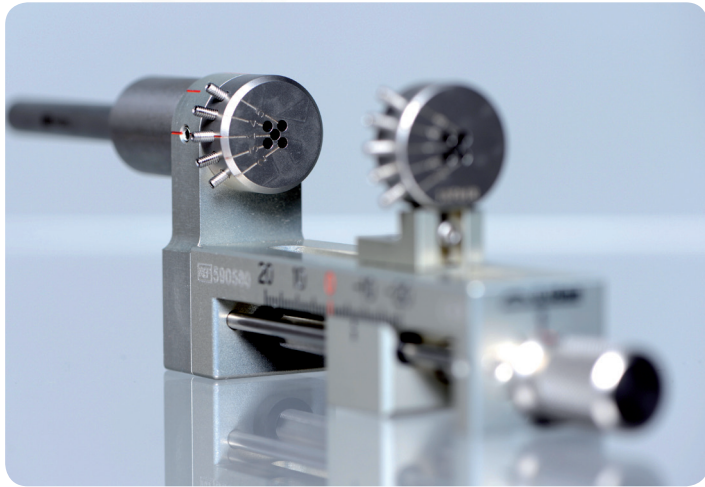
> Biopsy

Stereotactic biopsy provides clarity and certainty in an uncertain tumor diagnosis. inomed offers a proven range of biopsy equipment and instruments for intraoperative stereotactic tissue extraction procedures. The goal of this histological procedure is to get a reliable diagnosis that leads to better treatment for the patient.

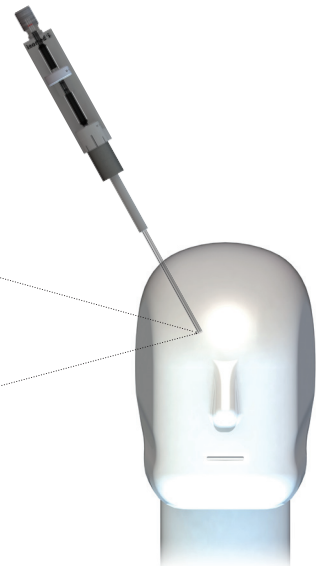




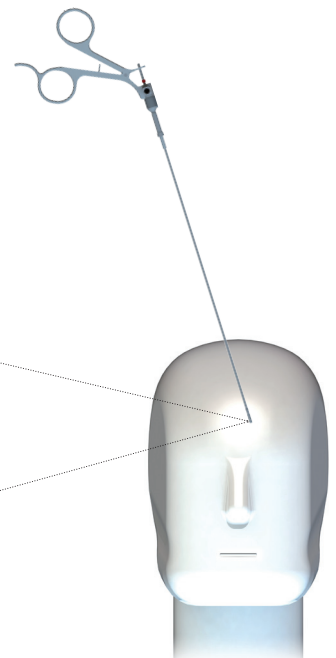
>> MicroDrive



The MicroDrive is used for the positioning of recording and stimulation electrodes during stereotactic surgeries. It is possible to load up to five electrodes simultaneously during the operation. The recording can start with a single electrode. A precise positioning of the electrode is possible due to the 50 μm resolution and haptic feedback at each turn. The MicroDrive and its accessories are autoclavable, and can be adapted to most stereotactic systems. The MicroDrive can be used independently of the MER recording system.



The assortment of biopsy instruments for tissue extractions on the human brain include all known probe types. inomed offers biopsy probes for all established stereotactic-systems. The inomed portfolio includes reusable and disposable probes.



- >> Partnership
- >> Precision
- >> Innovation



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Neurological Diagnostics

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we share competence

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