“In order to reach a target it is necessary to use an extremely precise instrument. **Aim** system abridges more than 30 years of intensive engineering development work alongside some of the most renowned neurosurgical centers worldwide, which has resulted in a complete, versatile and user-friendly system. Micromar has incorporated into its stereotactic system solutions which allow the neurosurgeon to carry out his work with excellence, reducing risks and assuring the very best results. **Aim** system is a unique piece of equipment which will satisfy all your needs.”

Antonio Martos Calvo
Aim system
TM03B (Teixeira-Martos)

Attributes which make the difference.

- Isocentric system;
- Compatible with CT-scan, MRI, and Digital Angiography;
- Centralized aiming system for the control and placing of electrodes;
- Direct fixing with 3 or 4 screws, or with the use of extension posts*;
- CT support* with angular movement system for greater precision in obtaining images;
- Curved segment* which allows the patient intubation.

Performance

Precise and minimally invasive

Aim system is used as a means of stereotactic tracking and navigation. The system assures the precise localization and approach of pre-determined targets from of CT-scan, MRI or Angiography images, allowing manual calculation or the use of software to obtain the stereotactic coordinates (X, Y and Z). Aim system is extremely versatile and can be used for several neurosurgical applications, offering maximum flexibility. It is ideal in situations where dependability and precision are fundamental.

* Optional Items
Diagnosis

Biopsy

General Neurosurgery

Guided Surgery

Catheter Placement

Guided Neuroendoscopy

Therapeutic Neurosurgery

Evacuation of Haematomas

Brain Abscess Evacuation

Functional Neurosurgery

Treatment of Movement Disorders

Treatment for Chronic Pain

Deep Electrode Implant (DBS)

Behaviour Surgery

Spasticity

Epilepsy Treatment
Easy fixation of stereotactic frame.

The frame can be fixed in a few minutes no matter how the images were taken: CT-scan, MR or Digital Angiography. The surgeon has the choice of fixing the frame directly on the patient’s head with 3 or 4 fixing screws with the target upward or downward; or he can use extension posts with a curved segment which allows operations in intubated patients. In this case the frame is in a low position, offering an ample field for open stereotactic guided procedures. Furthermore Aim system has CT table adapter which is adaptable to any CT model.

Fixation screws.

Aim system offers several models of fixation screws with adapted dimensions and functional characteristics. The screws are made of modern material such as stainless steel, aluminum, titanium and fiber composite compatible with MRI.

* Optional Items 1
This simple system facilitates the actions of positioning and fixing the stereotactic frame, avoiding undesired inclinations in the images for diagnosis.

Ear Aligners*

This item allows the use of extension posts* for cranial fixation with only 3 points. Made of special compound material it does not produce artifact, allowing the patient intubation, as well as offering a wider area for frontal approach. It is an excellent solution for stereotactic guided surgeries.

Curved Segment*

The curved segment, used with the extension posts, allows patient intubation.

Stereotactic Frame

Made of extremely light material, resistant and compatible with CAT-scan, MRI and Digital Angiography, the Stereotactic frame can be fixed directly on the patient's head with 3 or 4 fixation screws, with the target upward or downward.

Frontal "A" Segment*

* Optional Items
Solutions which make the difference.

To satisfy the precision demanded in a stereotactic surgery it is necessary to have access to perfect images. For this reason it is important to use a special adapter, compatible with the CT table machine*. Not only does Aim system have a different model of CT table adapter to each type of CT equipment, but it also has an exclusive adjusting system that offers 40 degrees freedom of movement which guarantees that a patient with the stereotactic frame fixed can be placed on the CT table without having his breathing obstructed and without any discomfort, even if this patient has cervical hipomobility.

* Optional items
MRI Localizers*
Made of material which does not produce artifact. These references are extremely compact and a useful aid in introducing into the MRI antenna, allowing a perfect take of images.

Digital Angiography Localizers*
Aimsystem has a set of localizers especially developed for taking angiographical images.

CT-scan Localizers*
This set allows images to be taken in upward and downward position. It has a set of infant localizers specifically for downward exams.

“Aimsystem comes with the exclusive ‘Tilt System’ which allows an ideal position with absolute comfort for the patient.”

CT table adapter with ”Tilt System”*
This support, with the exclusive “Tilt System”, offers greater comfort for the patient. It has a specific clamp fitting for the CT table, offering greater precision in taking images.

* Optional Items*
Planning

Software

The computer is not included with the product. The images of this catalogue are illustrative.
The Stereotactic Planning Software is a powerful tool which allows neurosurgeons to plan their procedures with maximum precision, without the complications presented by conventional software. Specially designed to attend the needs of the neurosurgeon, the software interface is of easy navigation and interaction. The software is compatible with DICOM images with algorithms which automatically recognize the fiduciary as well as correcting alignment problems between the gantry of the image system and the stereotactic frame, assisting the doctor in surgical planning.

Stereotactic Planning Software*: Maximum precision.

* Optional Items
Atlas Axial Superposition with Image Blending

Atlas Sagittal Resonance Superposition with MRI

Reconstitution Multiplanar and Volumetric

3D Trajectory

* The images are merely illustrative.
Get to know some of the uses of Software

- Advanced DICOM Support;
- Automatic calculation of stereotactic coordinates;
- Orthogonal and non-orthogonal MPR;
- Definition of points of interest and course calculations;
- 3D Reconstruction (Iso Surface and Volume);
- Automatic reconstruction of fiducaries;
- Zoom tools, shine and contrast;
- Measuring ruler and lines of reference;
- Generation of reports with the procedure data;
- Version Update System.

Automatic Image Blending

- Fusion between CT and MRI images;
- Advanced features for fusion quality inspection (Fusion Inspect Tools);
- View of fusion on all planes (axial, sagittal and coronal);
- Automatic fusion improvement resource.

Functional Surgery

- Anatomical Atlas Superposition in all viewpoints (axial, sagittal and coronal);
- Calculations of basal coordinates (in relation to joints AC/PC references);
- Anatomical atlas allowing for research of nucleus nomenclature;
- Atlas fine adjustment tool (configuration and movement);
- Identification, definition and intuitive navigation by anatomical nucleus;
- Atlas overlay in fusion images.
Quick-attachments

Attachments which allow the quick and easy assembly.

Aim system comes with a specially designed clamping system to simplify assembly, facilitating the neurosurgeons work during all the surgery. Its versatility allows the choice of the most convenient approach to reach the planned target, once it can be assembled in many different ways, amplifying its use. The Stereotactic frame can be fixed to the patient’s head with or without extension posts*, using 3 or 4 points of fixation upward or downward, offering a wide field of approach.

* Optional items
Isocentrical. All directions lead to the target.

The Aim system is an isocentric tool which allows approach from all parts of the skull without restriction: upward or downward targets, from the cerebral stem to the vertex, lateral approach (right and left), anterior, posterior, temporal, posterior fossa or trans sphenoidal, offering maximum flexibility of procedures at all times. Isocentrical, the system offers a wide range of options so that the neurosurgeon can choose between several combinations of approach angles (Alpha and Beta) without having to change the Stereotactic coordinates (X, Y and Z), avoiding undesired areas and always able to choose the best trajectory to the target.
“Discover new approaches - Aim system offers a wide range of options so that the surgeon can choose the best trajectory.”
Maximum precision.

Aim system comes with easily reading scales which allow for a precise positioning of the stereotactic coordinates. See below some of the attributes which make this machine the ideal stereotactic for functional surgeries.

- Ear Aligners*: guarantee perfect alignment
- Short Z bar*: avoids blind spots
- Vernier: precision in movement of the instrument
- Millimetrical tube: comes with integrated target finder.

Total security

While passing the coordinates to Aim system, the surgeon can still check the exact position of the instrument. Maximum precision in functional surgery.
Practicability

Twin Tray, maximum practicability.

To help in transport and sterilization, Aim system has a practical system of trays: Twin Tray. These trays are made of last generation raw material compatible with all methods of sterilization.

The stereotactic procedure is made up of two periods: pre-operative and intraoperative.

This exclusive system of trays comes with logic organization which contemplates these two stages and allows the necessary components for cranial fixation to be manipulated independently from the items which will be used in the surgical phase of the procedure. Thus maximum practicability is guaranteed.

Fixation Tray*

Set for fixing the frame on the patient’s head.

*The images are illustrative, representing the basic composition of Aim system with some of their optional items.
Easy Storage

Twin Tray has the identification of all components chosen, to facilitate packing, assuring maximum protection of the items in transport, guaranteeing the integrity of the system.

OR Tray*

Set made for carrying out stereotactic procedures in the operating room.

*The images are illustrative, representing the basic composition of the Aim system with some of their optional items.
Versatility

Many more possibilities.

To offer still further possibilities to Aim system, Micromar has accessories which allow amplified interaction of the system with other surgical techniques. Micromar keeps an engineering department ready to attend the specific needs of each neurosurgeon, and is committed to developing, with the client, an adapted and exclusive solution for each need.

Micromar Electrode Placer*

Aim system offers an exclusive system for the introduction of deep stimulation electrodes (DBS). The electrode is placed stereotactically, allowing radioscopical checking of the intracranial position, as well as having an attachment which avoids movement of the electrode during the removal procedure.

* Optional Items 1
Integration with Microelectrode recording systems*

Aimsystem can be adaptable with main Microelectrode Recording Systems. Check availability.

Support for Neuroendoscopy*

Aimsystem Stereotactic System allows the integration with most of neuroendoscopes on the market. Check availability.

* Optional Items
Isocentric Retractor Spatulas*

The Isocentric Retractor Spatulas allow open surgeries guided by Stereotaxy. The convergence of the tips of the spatulas indicates the stereotactic determined target, without interfering in the microscope range of vision.

* Optional Items
Micromar offers a complete solution, integrating the use of electrodes for functional surgery which allows ablation procedures allied to the stereotaxy precision.

Facility Integration

Micromar offers electrodes especially produced to be used in conjunction with Aim-system.
This exclusive system allows the Retractor Arms to be used along with the Aim system frame, which is ideal for carrying out open guided surgeries. *Optional items*
"Micromar has an engineering and support departments, fully qualified to meet the main needs of its customers.

Quick Bolting Bushing Guides*
Allow quick connection to the stereotactic chariot.

Security Lock
The use of this lock ensures that the chariot remains in the arc even when released.

"Attachments which simplify the neurosurgeon’s work."

Stereotactic System Adapter/ Cranial Fixation*
With this unique adapter, stereotactic surgeries can be made with the advantage of total mobility of the HeadFix cranial fixation system.

* Optional Items
The best products easily attainable
Guarantee of services that fit your needs

- Personal training. Micromar products used to their best potential.
- Technical Assistance. Revision and maintenance of products at your disposal.
- Guaranteed substitution of parts.

Find out more about these and other Micromar products at: www.micromar.com