NAV1® electromagnetic
For precise navigation in FESS and ear surgery

- Low follow-up costs thanks to reusable EM instruments in proven KARL STORZ quality*
- High precision thanks to sensors in the instrument tips
- Compact design for easy integration into the OR
- Customized enhancement possible thanks to optical measurement technology
- User-friendly control concept with few interaction steps
- Possible to update NAV1® SINISTRACKER™ planning software, the navigated endoscope and the navigated shaver tracker
- Planning and monitoring of risk structures with intraoperative Distance Control
- Automatic and reliable documentation of the navigated procedure

* Up to 30 applications guaranteed
Benefits of electromagnetic instruments as compared to optical navigation:

- No restrictions as no clear line of sight to the instruments is required unlike optical measurement systems
- All electromagnetic instruments can therefore be rotated and utilized according to the surgeon’s preferences (particularly advantageous for endoscopically assisted bimanual operating techniques)
- Electromagnetic instruments can be manually manipulated to allow intraoperative adjustment to a specific anatomical surgical field
- Less space required through the omission of an optical camera with a videocart and/or mobile stand

40820001 NAV1® ELECTROMAGNETIC
including:
NAV1® Module
NAV1® ELECTROMAGNETIC Module
NAV1® ELECTROMAGNETIC Field Generator
Headband, for navigation, for single use
EM Patient Tracker
EM Probe
2x Mains Cord, length 300 cm
Module Connecting Cable
Optical Mouse
Electromagnetic Navigated Instruments for FESS Surgery, reusable 30 times

**408201.05** **EM Navigation Probe**, with atraumatic tip, bayonet-shaped, for patient registration, tip diameter 1.9 mm, cable length 250 cm, working length 10.5 cm, **autoclavable**, for use with NAV1® ELECTROMAGNETIC

**408201.10** **EM Navigation Probe**, with atraumatic tip, malleable, straight, tip diameter 1.7 mm, cable length 250 cm, working length 8.5 cm, **autoclavable**, for use with NAV1® ELECTROMAGNETIC

**408201.12** **EM Navigation Probe**, with atraumatic tip, malleable, curved 63°, tip diameter 1.7 mm, cable length 250 cm, working length 8.5 cm, **autoclavable**, for use with NAV1® ELECTROMAGNETIC

**408201.11** **EM Frontal Sinus Probe**, with atraumatic tip, curved 77°, tip diameter 1.2 mm, cable length 250 cm, working length 7 cm, **autoclavable**, for use with NAV1® ELECTROMAGNETIC

**408201.45** **EM Suction Tube**, with cut-off hole, straight, LUER, outer diameter 3.5 mm, cable length 250 cm, working length 10 cm, **autoclavable**, for use with NAV1® ELECTROMAGNETIC

**408201.65** **EM Suction Tube**, with cut-off hole, curved 60°, LUER, outer diameter 3.5 mm, cable length 250 cm, working length 10 cm, **autoclavable**, for use with NAV1® ELECTROMAGNETIC

**408201.63** **EM Navigated Suction Tube**, curved, outer diameter 3 mm, **autoclavable**, for use with NAV1® ELECTROMAGNETIC

**Benefits:**
- Slim diameter of 3 mm
- Lateral suction hole for regulating suction power

**NEW**

**408201.75** **EM Navigated Suction Tube**, double curved, outer diameter 3 mm, **autoclavable**, for use with NAV1® ELECTROMAGNETIC

**Benefits:**
- Slim diameter of 3 mm
- Improved access to the frontal sinuses thanks to double curve that is adapted to the anatomy
- Probe tip allows tissue to be mobilized or removed during suction
**Highlights NAVIGATION | 2-2019**

**EM Antrum Curette**, small, oblong, cable length 250 cm, length 19 cm, **autoclavable**, for use with NAV1® ELECTROMAGNETIC

**EM Frontal Sinus Curette**, forward cutting, curved 55°, oval, cable length 250 cm, length 18 cm, **autoclavable**, for use with NAV1® ELECTROMAGNETIC

**EM Frontal Sinus Curette**, forward cutting, curved 90°, oval, cable length 250 cm, length 18 cm, **autoclavable**, for use with NAV1® ELECTROMAGNETIC

**Electromagnetic Navigated Instruments for Ear Surgery**

**Bone Anchor**, for KARL STORZ navigation, **autoclavable**, for use with Patient Tracker, Patient Tracker II, Patient Tracker III or EM Patient Tracker

**EM Patient Tracker**, with verification adaptor and fixation screw, dimensions 55 x 30 x 8 mm, cable length 250 cm, **autoclavable**, for use with NAV1® ELECTROMAGNETIC

**EM Navigation Probe**, with atraumatic tip, bayonet-shaped, for patient registration, tip diameter 1.9 mm, cable length 250 cm, working length 10.5 cm, **autoclavable**, reusable 30 times, for use with NAV1® ELECTROMAGNETIC

**EM Navigation Probe**, with atraumatic tip, malleable, curved 63°, tip diameter 1.7 mm, cable length 250 cm, working length 8.5 cm, **autoclavable**, reusable 30 times, for use with NAV1® ELECTROMAGNETIC

**Wire Tray**, provides safe storage of up to 4 EM navigation instruments (408201xx) and one EM patient tracker during cleaning and sterilization, external dimensions (w x d x h): 460 x 150 x 80 mm
NAV1® SinusTracker™

The innovative planning software for new routes in FESS surgery

The NAV1® SINUSTRAKERR™ planning software enhances the KARL STORZ NAV1® ELECTROMAGNETIC system with the automatic planning of access paths in paranasal sinus and skull base surgery. On the basis of a preoperatively set starting and destination point in the patient’s radiological data, the software allows the surgeon to determine a precise access path that is specially adapted to the individual anatomic structures of the patient. The physician then reviews and modifies the suggested access path at their discretion. Intraoperatively, the selected route is visualized on the navigation screen so that the actual position in the site is under constant control.

Benefits of the NAV1® SINUSTRAKERR™

- Multiple Path Planning enables the preoperative planning and naming of up to eight access paths and alternatives
- Intraoperative visualization and control of access paths
- Less preoperative planning required thanks to automatic preplanning
- Flexible, pre- and intraoperative adaptation of the access path possible
40 810600  **SINISTRACKER™**, additional software module for the NAV1® family, compatible with software version 6.0.0 or higher

Set waypoints by clicking into the 2D views.
NAV1® Endoscope Tracker

Augmented FESS endoscopy with the new electromagnetic navigated endoscope adaptor

Using augmented endoscopy, which was specially developed for the NAV1® SINUSTRACKER™, the real-time endoscopic image can be enhanced with information obtained from the preoperative virtual planning of the access route. Adaptor 40 8201 50 is used in conjunction with KARL STORZ HOPKINS® telescopes with 0° (7230 AA), 30° (7230 BA) or 45° (7230 FA) directions of view for augmentation. The position and direction of view of the employed telescope is displayed in the radiology images in such a way that the endoscopic image can be precisely assigned to the exact location in-situ.

Benefits of augmented endoscopy

- Possible to display planning elements in the standard endoscopic image
- Visual navigation of non-navigated instruments along the preoperatively planned route
- Spatial mapping of the direction of view and the position of the telescope in the site
408201 50  **EM Endoscope Tracker**, universal, cable length 250 cm, **autoclavable**, reusable 30 times, for use with NAV1® ELECTROMAGNETIC 40820001, HOPKINS® Telescope 0° 7230 AA, HOPKINS® Telescope 30° 7230 BA, HOPKINS® Telescope 45° 7230 FA, NAV1® SINISTRACKER™ 40810600

408201 51  **EM Endoscope Tracker 2.0**, universal, cable length 250 cm, **autoclavable**, reusable 30 times, for use with NAV1® ELECTROMAGNETIC 40820001, HOPKINS® Telescope 0° 7230 AA, HOPKINS® Telescope 30° 7230 BA/BLA/BVA, HOPKINS® Telescope 45° 7230 FA/FLA/FVA, NAV1® SINISTRACKER™ 40810600

(The telescopes displayed here are not included in delivery)
EM Shaver Tracker

The new EM shaver tracker allows the electromagnetic navigation of motorized standard shaver blades and sinus burrs.

Benefits of EM-navigated shaver blades and sinus burrs:

- Reusable tracker (up to 30 applications guaranteed)
- Customary handling of the shaver blades and sinus burrs by attaching the shaver tracker to the rotary wheel of the blade or burr
- Automatic detection of rotation
- Visualized geometry and ablation radius of the shaver attachments
- Precise locking to shaver blade to achieve greater accuracy
**EM Shaver Tracker**, cable length 200 cm, autoclavable, reusable 30 times, for use with NAV1® ELECTROMAGNETIC, DRILLCUT-X® II, DRILLCUT-X® II N and DRILLCUT-X® II-35 N as well as Sinus Burrs 41305 D, 41305 DW, 41303 DT, 41335 DT, 41335 DW and Shaver Blades 41201 KK, 41204 KKB, 41301 KK, 41304 KKB

(Shaver handpiece shown here is not included in delivery)

Sinus Burrs, for use with DRILLCUT-X® II N Shaver Handpiece 40712055, DRILLCUT-X® II Shaver Handpiece 40712050 in combination with NAV1® PICO, NAV1® OPTICAL and Optical Shaver Tracker 40800122 as well as NAV1® ELECTROMAGNETIC and EM Shaver Tracker 40820123

41305 D **Sinus Burr**, with integrated irrigation, curved 15°, diamond head, burr diameter 5 mm, shaft diameter 4 mm, length 12 cm, sterile, for single use, package of 5, color code: red-yellow

41305 DW **Same**, curved 40°

41303 DT **Same**, curved 7°, burr diameter 3.6 mm

Sinus Burrs, for use with DRILLCUT-X® II-35 Shaver Handpiece 40712035, DRILLCUT-X® II-35 N Shaver Handpiece 40712535 in combination with NAV1® PICO, NAV1® OPTICAL and Optical Shaver Tracker 40800122 as well as NAV1® ELECTROMAGNETIC and EM Shaver Tracker 40820123

41335 DW **Sinus Burr 35k**, with integrated irrigation, curved 40°, diamond head, burr diameter 5 mm, shaft diameter 4 mm, length 12 cm, sterile, for single use, package of 5, color code: red

41335 DT **Same**, curved 70°, burr diameter 3.6 mm

Shaver Blades, for use with DRILLCUT-X® II N Shaver Handpiece 40712055, DRILLCUT-X® II Shaver Handpiece 40712050 and DRILLCUT-X II-35 N Shaver Handpiece 40712535 in combination with NAV1® PICO, NAV1® OPTICAL and Optical Shaver Tracker 40800122 as well as NAV1® ELECTROMAGNETIC and EM Shaver Tracker 40820123

41201 KK **Shaver Blade**, with integrated irrigation, straight, sterilizable, double serrated cutting edge, rectangular cutting window, diameter 4 mm, length 12 cm, color code: blue-yellow

41301 KK **Same**, sterile, for single use, package of 5

41204 KKB **Shaver Blade**, with integrated irrigation, curved 40°, sterilizable, cutting edge serrated backwards, double serrated, rectangular cutting window, diameter 4 mm, length 12 cm, color code: blue-yellow

41304 KKB **Same**, sterile, for single use, package of 5
NAV1® optical

The optical navigation system for FESS and ear surgery without any single-use products

Benefits of NAV1® OPTICAL

- Seamless integration as the basic unit can be attached to a ceiling supply unit or equipment cart
- Very economic thanks to patented autoclavable and therefore reusable glass spheres and instruments
- User-friendly interface – short learning curve thanks to clearly defined control elements and menu navigation
- Wide range of conventional as well as motor-driven navigation instruments in the proven KARL STORZ quality
- NAV1® ELECTROMAGNETIC module enables customized enhancement thanks to optical measurement technology
40810001 NAV1® OPTICAL
including:
NAV1® Module
Navigation Camera
Stand, mobile
Module Connecting Cable, length 750 cm
Headband for Navigation, for single use
Patient Tracker III
Navigation Probe
Mains Cord
Optical Mouse

Optical Navigated Instruments for FESS Surgery

40800088 Patient Tracker III,
with verification adaptor, 3 incorporated glass marker spheres and fixation screw, autoclavable,
dimensions: 80 x 60 x 12 mm, for use with NAV1® PICO and NAV1® OPTICAL

40800110 Navigation Probe,
with 3 fixed glass marker spheres, autoclavable,
dimensions: 295 x 15 x 30 mm, for use with NAV1® PICO and NAV1® OPTICAL

40800111 Optical Navigated Frontal Sinus Probe,
for use with NAV1® PICO, NAV1® OPTICAL and Tool Tracker 40800120
Imaging and OR Integration

Storage and administration of image and video data

Flexible support for image sources

Centralized communication interface

KARL STORZ OR1™

Future-oriented integration meets innovative data management

KARL STORZ SE & Co. KG, Dr.-Karl-Storz-Straße 34, 78532 Tuttlingen/Germany

www.karlstorz.com
Further information and an overview of Navigation products from KARL STORZ can be viewed on

www.karlstorz.com
in the Human Medicine section, Navigation