ENDOSCOPIC SINUS SURGERY OF THE OSTEOMEATAL COMPLEX

ENT Procedure Instruction Manual
Written by Prof A. Simon Carney and Prof Brent A. Senior
Contents

PROCEDURE STEPS

Step 01: Set Up .................................................................6
Step 02: Uncinectomy and Middle Meatal Antrostomy ..........8
Step 03: Anterior Ethmoidectomy ...................................10
Step 04: Trans-Nasal Sphenoidotomy ............................12
Step 05: The Frontal Recess ............................................13
Notes ...............................................................................15

EQUIPMENT GUIDE

A SURGEON’S VIEW
Optimising Sinus Surgery with the Olympus System ......16
DIEGO ELITE® Multidebrider® ..........................................18
VISERA 4K UHD Imaging System .................................22
INSTACLEAR Lens Cleaner .............................................27
Explorent Instruments .....................................................31
Richards Instruments .....................................................61
Disclaimer

This surgical technique is presented to demonstrate the technique utilized by:

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Olympus as manufacturer does not practice medicine, and therefore the information on the products and procedures contained in this document is of a general nature and does not represent and does not constitute medical advice or recommendations. This information does not purport to constitute any diagnostic or therapeutic statement with regard to any individual medical case. Each patient must be examined and advised individually, and this document does not replace the need for such examination and/or advice in whole or in part.

Please refer to the instructions for use for important product information, including, but not limited to, contraindications, warnings, precautions, and adverse effects.
Procedure Steps

01 | Set Up

The following is intended as a basic equipment list. Most surgeons will use several more instruments routinely. Even the most basic endoscopic sinus surgery will be difficult, if not impossible without these instruments being present on the surgeon’s tray:

- Freer elevator
- Small back biting forceps (fixed or rotating)
- Straight Blakesley-Weil forceps
- 45º Blakesley-Weil forceps
- Straight sinus thru-cut forceps
- 45º sinus thru-cut forceps
- Double right angle ball probe
- 2mm forward slanting Kerrison punch forceps
- Straight curette
- Angled frontal curette
- 45º curette
- Olive – tip angled suction
- Disposable straight suction
- Diathermy instrument: suction bipolar ideal but long–line bipolar forceps will suffice
- Microdebrider
Due to the risk of neck and back injury, the vast majority of surgeons now operate off the screen or video monitor. The patient’s head should be placed on a soft head ring and, if under general anaesthetic, the conjunctivae should be lubricated and can be taped laterally or left open, as per the surgeon’s individual preference. The operative table should be reversed to allow space for the surgeon’s legs to sit under the table. Depending on the size of the patient, an arm board may be helpful, placed alongside the head of the bed and covered with two or more rolled up sheets to elevate the surgeon’s elbow 2-3 inches above the height of the bed.

Anti-Fog:
A simple detergent solution may suffice although if a commercially-available anti-fog agent is used, this can either be on a sponge placed on the patients forehead or beside the surgeon. Another option is to place the anti-fog agent into a 2ml syringe with the plunger removed and the black rubber plunger seal then reinserted into the barrel of the syringe. The syringe barrel is of an ideal size to place an endoscope. This minimises the risk of blood contaminating the anti-fog sponge and also minimises excessive hand movements.

Orientation:
There should be a direct line between the surgeon’s eyes, the nostrils of the patient and the centre of the video monitor. This will prevent excessive neck or back rotation and minimise the risk of strain, especially important for prolonged procedures.

Preparation:
Anti-coagulation medication should be stopped at an appropriate time prior to surgery. Homeopathic or over the counter medication such as fish oil, glucosamine and multi vitamins should also be stopped 7-10 days prior to surgery. If the procedure is to be performed under local anaesthetic or LA and sedation, the nose should be first anaesthetised with lignocaine/lidocaine, with or without phenylephrine. Under general anaesthetic it is usually not required and local anaesthetic/decongestant swabs or pledgelets can be placed without spray. Depending on the planned surgery, either 4 or 6 neuropatties/strips of 5x1cm ribbon gauze are used.

Where available: 10% Cocaine solution (max dose is 3mg/kg), 1ml 1:1000 adrenalin, 6ml normal saline.
Where cocaine is not available: The ribbon gauze or neuropatties are soaked thoroughly in the solution. Using the 0° endoscope, one gauze is placed in the middle meatus, covering the uncinate process and extending over the axilla of the middle turbinate. Another is placed between the middle turbinate and the septum and a third (if required) is draped over the inferior turbinate. Once the gauze has been removed, further topical vasoconstriction can be achieved using 2% lignocaine/lidocaine with adrenalin. The middle turbinate itself and the frontal process of the maxilla are optimal injection sites. Enough anaesthetic should be applied to ensure blanching of the required area with a maximum of 2ml used on each side of the nose.
Gently medialise the middle turbinate with a Freer elevator.

Perform an inferior cut through the uncinate process with back-biting forceps – 2 or more bites may be necessary.

Perform a superior cut through the uncinate with either the back-biting forceps or a sickle knife.

Fracture the uncinate process forwards with a double right angle ball probe.
■ Amputate the uncinate process with either 45º thru-cut forceps or a 2mm Kerrison punch.

■ Identify the natural ostium of the maxillary sinus, using a 30º endoscope if necessary.

**Note:** Incomplete uncinectomy is the leading cause of failure to identify the natural maxillary sinus ostium.

■ Place a double right angle ball probe into the ostium and gently fracture the inferior portion of the uncinate process away from the lateral nasal wall.

**Note:** It is important not to create a false opening into the maxillary sinus by placing the double right angled ball probe into the posterior fontanelle of the maxillary sinus ostium. An angled endoscope will allow you to confirm the opening of the natural ostium. It is also important to realise the uncinate process is not purely a vertical strip of bone. It is usually a curved bone, extending postero-inferiorly to the maxillary sinus ostium.
Once the uncinate has been removed and the maxillary sinus identified, it should be possible to completely view the anterior face of the bulla ethmoidalis.

Insert a double right angled ball probe into the natural ostium of the bulla.

Using the double right angled ball probe, identify the natural ostium of the bulla on its medial side.

Position the probe under the natural ostium of the bulla.

Fracture the anterior face of the bulla forward with the ball probe.
The fragments of the anterior wall of the bulla can then be removed using a combination of thru-cutting instruments and the microdebrider.

**Note:** It is important that the tip of the microdebrider is visible at all times and no pressure whatsoever is exerted on the lateral nasal wall to prevent accidental injury to the lamina papyracea.

**Note:** The bulla may be closely applied to the ground lamella of the middle turbinate. If so, the junction between the anterior and posterior ethmoid will be the posterior wall of the bulla. If the bulla sits anterior to the ground lamella (basal lamella), then there will be a cleft behind the posterior wall of the bulla (the retro-bullar recess).

**Note:** When removing the anterior face of the bulla, it is important to remember the position of the anterior ethmoidal artery. The artery is usually located one cell posterior to the frontal recess. If the bulla reaches the skull base then the anterior ethmoidal artery may be anterior, at the level of the anterior wall or just posterior to the anterior wall of the bulla ethmoidalis. As such, a surgeon should be prepared for each of these eventualities. The position of the anterior ethmoidal artery should be checked prior to surgery by detailed examination of the patient’s CT scans.
Identify the sphenoid ostium by placing the endoscope and a straight suction instrument into the posterior choana and identifying the anterior face of the sphenoid bone.

The sucker can then be used to walk up the face of the sphenoid immediately adjacent to the nasal septum. The superior turbinate will then become visible. The usual location of the sphenoid ostium is one third of the way up the superior turbinate but can be extremely variable.

Alternatively, the ostium can be identified by placing the endoscope medial to the middle turbinate and identifying the superior turbinate. The ostium will be seen in the sphenoethmoid recess medial to the superior turbinate.

Using the small sucker, palpate the thick bone of the sphenoid face which then becomes soft as the fontanelle of the sphenoid ostium is approached. A small polyp, the presence of mucopus or a bubble of air may be clues as to the location of the sphenoid ostium.

**Note:** It is always important to view the pre-operative CT scan to ensure there actually is a sphenoid sinus present. The sphenoid may be hypoplastic, lateral or even absent in rare cases.

Once the sphenoid ostium has been identified, it is then possible to enlarge it if required.

**Note:** It is important to remember that the septal branch of the sphenopalatine artery passes just inferior to the natural sphenoid ostium. The safest way to enlarge the ostium is therefore laterally and superiorly although this needs to be performed with caution due to the optic nerve (laterally) and skull base (superiorly).
Ensure a complete uncinectomy has been performed.

To improve access to the frontal recess, enlarge the axilla of the middle turbinate using a 2mm Kerrison punch. This will remove the anterior face of the agger nasi cell and also the hard bone of the frontal process of the maxilla.

**Note:** It is important to ensure the Kerrison punch does not expose the lateral sac at this point. By balloting the eye, the surgeon can be reassured that the lamina papyracea is intact and then a microdebrider can be used to remove the fragments of the axilla.

The surgeon should then be looking directly into the agger nasi cell and visualising its posterior wall. The preoperative CT scans can be examined to identify the frontal drainage pathway. This is always posterior to the agger nasi cell but may be further complicated by the presence of fronto-ethmoidal cells (Kuhn cells). Use of a frontal sinus seeker at this point may clearly identify the frontal drainage pathway.

**Note:** Not all patients have an agger nasi cell. It is important to review the preoperative CT scan to identify this cell.
- Straight and angled curettes can be used to fracture forward the posterior wall of the agger nasi cell.

- Formal identification of the anterior ethmoidal artery is recommended to ensure that the skull base is not at risk.

- It may be helpful for the surgeon to switch to a 30° or 45° endoscope. Angled microdebrider blades (40°, 60° or 90° degree) will also facilitate removal of the anterior frontoethmoidal cells.

- Using an upward punch, continue removing the fractured agger nasi cell.

- Using an olive tip sucker, remove all eosinophilic mucin to ensure against inflammatory cascade after surgery.

**Note:** Whilst performing the frontal recess dissection, it is critically important not to cause a circumferential mucosal injury. If this occurs, the frontal recess will stenose and may produce iatrogenic frontal disease that can be extremely difficult to salvage.

**Note:** A particularly useful instrument in the frontal recess is the 2.5mm Hosemann 70° frontal punch. This sharp punch is extremely effective in removing frontoethmoidal cells and ensuring the frontal recess is enlarged anteriorly, laterally and medially. If there are posterior cells within the frontal recess, it is important that the bone is dissected out in a blunt manner and then removed with Blakesley Weil forceps, ensuring mucosal integrity is preserved. Following an adequate frontal recess dissection, it should be possible to insert an olive tip sucker into the frontal sinus and this can be used to irrigate the sinus, remove secretions and/or debris.
A Surgeon’s View
Optimising Sinus Surgery with the Olympus System

VISERA 4K UHD IMAGING SYSTEM
- True (not up-scaled) 4K UHD imaging provides greater detail, accuracy and reassurance during sinus surgery.
- An end-to-end 4K UHD imaging chain: images are captured by ‘ultra’ endoscopes and a camera head with a unique native 4K “Exmor R” sensor, and then accurately displayed via the 4K UHD processor and output monitor.

ULTRA ENDOSCOPES
- ULTRA endoscopes are optimised for the 4K imaging system and have ‘extra-low dispersion (ED)’ glass lenses that deliver razor-sharp images and have high contrast at high spatial frequencies.
- One-touch auto focus allows fast and accurate viewing optimisation and simplified usability during surgery.
- An “opticontrast LCD” panel on the monitor displays enhanced contrasts, reduced reflections and unclouded images.

INSTACLEAR ENDOSCOPIC LENS CLEANER
- Clears the lens of a rigid endoscope during surgery without the need to remove it from the nasal cavity for significantly more efficient surgery.
- InstaClear is 135% faster than other lens cleaning systems with no bubbles or meniscus remaining on the lens.
**DIEGO ELITE® MULTIDEBRIDER®**

- An extensive range of blades and burrs covers the majority of key procedures.
- Excellent suction provided by an integrated straight design from blade to handpiece and tube set.
- Option of bipolar cautery in blades allows for better hemostasis without the use of extra instruments allowing procedure times of up to 12% faster.\(^2\)
- A simple anti-clog tube system removes frustration, saves time by minimizing change of equipment and makes surgery far more fluid and enjoyable.
- A choice between straight and angled hand pieces allows for a surgeon’s personal preference which can significantly increase comfort during surgery.

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**CELON ELITE RFITT ELECTROSURGICAL SYSTEM**

- Used to perform standard electrosurgery in the ENT office or operating room with settings that can be personalized to simplify everyday work routines of medical staff.
- Intelligent tissue monitoring (impedance feedback and autostop) allows precise and safe tissue ablation for a variety of indications.

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**EXPLORENT AND RICHARDS INSTRUMENTS**

- A comprehensive range of high quality instruments specifically designed to provide comfort during use and precise sinus surgery.

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\(^1\) Data on file with Olympus (Report DN0014006).

**Equipment Guide**

**DIEGO ELITE© Multidebrider©**

### Power Console

**MDCONS100**  DIEGO ELITE power console

- **Technical Data**
  - **Power supply**
    - Voltage: 100 – 240 V ~
    - Frequency: 50/60 Hz
    - Maximum input power: 720 VA
    - Power fuse: 2x 5 A
  - **Size**
    - Width x depth x height: 370 x 465 x 156 mm
    - Weight: 12.5 kg
  - **Classification**
    - Protection against electric shock: type BF, class I
    - Directive 93/42/EEC: class IIa

### Suction Module

**MDSM220V**  DIEGO ELITE suction module, 220 VAC

- **Technical Data**
  - **Power supply**
    - Voltage (MDSM220V): 220 – 240 V ~
    - Frequency: 50/60 Hz
    - Maximum input power: 264 VA
    - Power fuse: 4 A / 2 A
  - **Size**
    - Width x depth x height: 420 x 470 x 356 mm
    - Weight: 11.5 kg
  - **Classification**
    - Protection against electric shock: type BF, class I
    - Directive 93/42/EEC: class IIa

**TS102SF**  Suction module, tube set, suction/filter, 5 pcs.

- Multi-use, replace daily

### Foot Switch

**MDFS100**  DIEGO ELITE foot switch

- **Technical Data**
  - **Size**
    - Width x depth x height: 175 x 185 x 50 mm
    - Weight: 1.6 kg
    - Length of cable: 4 m
  - **Classification**
    - Ingress protection rating: IPX8 (except plug)
Handpieces

MDHP100A  Multidebrider handpiece, angled

MDHP100S  Multidebrider handpiece, straight

MDHPTRAY  Multidebrider handpiece sterilization tray

TS100S   DIEGO ELITE tubeset, standard, sterile, single use, 5 pcs.

TS101DC  DIEGO ELITE tubeset, declog, sterile, single use, 5 pcs.

System Chart
### Sinus Application Blades

<table>
<thead>
<tr>
<th>Blade Type</th>
<th>Size</th>
<th>Angle</th>
<th>Suction</th>
<th>Sterile</th>
<th>Single Use</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shaver blade, standard, type A</td>
<td>4 mm</td>
<td>0°–40°</td>
<td>distal</td>
<td>sterile, single</td>
<td>5 pcs.</td>
<td>5 pcs.</td>
</tr>
<tr>
<td>SB4000SS</td>
<td>4 mm</td>
<td>40°</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB4800SA</td>
<td>4.8 mm</td>
<td>straight</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Shaver blade, standard, serrated</td>
<td>2.9 mm</td>
<td>40°</td>
<td>distal</td>
<td>sterile, single</td>
<td>5 pcs.</td>
<td></td>
</tr>
<tr>
<td>SB2900SS</td>
<td>2.9 mm</td>
<td>40°</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB2940SS</td>
<td>2.9 mm</td>
<td>40°</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>SB2975SS</td>
<td>2.9 mm</td>
<td>40°</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>SB4000SS</td>
<td>4 mm</td>
<td>40°</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB4015SS</td>
<td>4 mm</td>
<td>40°</td>
<td></td>
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<tr>
<td>SB4040SS</td>
<td>4 mm</td>
<td>40°</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>SB4060SS</td>
<td>4 mm</td>
<td>60°</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shaver blade, rotatable, serrated, distal suction, sterile, single use</td>
<td>4 mm, 40°</td>
<td>4 mm, 60°</td>
<td>4 mm, 90°</td>
<td>5 pcs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB4040RS</td>
<td>4 mm</td>
<td>40°</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB4060RS</td>
<td>4 mm</td>
<td>60°</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>SB4090RS</td>
<td>4 mm</td>
<td>90°</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bipolar blade, standard, serrated, distal suction, sterile, single use</td>
<td>4 mm, 40°</td>
<td>4 mm, 60°</td>
<td>4 mm, 90°</td>
<td>5 pcs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BB4000SS</td>
<td>4 mm</td>
<td>40°</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>BB4040SS</td>
<td>4 mm</td>
<td>40°</td>
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</table>

### Tonsils and Adenoid Application Blades

<table>
<thead>
<tr>
<th>Blade Type</th>
<th>Size</th>
<th>Angle</th>
<th>Suction</th>
<th>Sterile</th>
<th>Single Use</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malleable blade,</td>
<td>4 mm</td>
<td>0°–40°</td>
<td></td>
<td>sterile, single</td>
<td>5 pcs.</td>
<td>5 pcs.</td>
</tr>
<tr>
<td>MS4000SS</td>
<td>4 mm</td>
<td>40°</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bipolar blade, convex, serrated,</td>
<td>4 mm, 40°</td>
<td>4 mm, 40°</td>
<td>4 mm, 60°</td>
<td>5 pcs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BB4040XS</td>
<td>4 mm</td>
<td>40°</td>
<td></td>
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### Non Distal Suction Blades

<table>
<thead>
<tr>
<th>Blade Type</th>
<th>Size</th>
<th>Angle</th>
<th>Suction</th>
<th>Sterile</th>
<th>Single Use</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shaver blade, standard, serrated, closed, sterile, single use</td>
<td>4 mm, 40°</td>
<td>4 mm, 60°</td>
<td>4 mm, 90°</td>
<td>5 pcs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shaver blade, rotatable, serrated, closed, sterile, single use</td>
<td>4 mm, 40°</td>
<td>4 mm, 60°</td>
<td>4 mm, 90°</td>
<td>5 pcs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB4000SC</td>
<td>4 mm</td>
<td>straight</td>
<td></td>
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<tr>
<td>SB4015SC</td>
<td>4 mm</td>
<td>15°</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>SB2940SC</td>
<td>2.9 mm</td>
<td>40°</td>
<td></td>
<td></td>
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<tr>
<td>SB4040SC</td>
<td>4 mm</td>
<td>40°</td>
<td></td>
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</tr>
<tr>
<td>SB4060SC</td>
<td>4 mm</td>
<td>60°</td>
<td></td>
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</tr>
<tr>
<td>SB2975SC</td>
<td>2.9 mm</td>
<td>75°</td>
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</tr>
<tr>
<td>MB4000SS</td>
<td>Monopolar blade, standard, serrated, 4 mm, straight, sterile, single use</td>
<td>4 mm, 40°</td>
<td>4 mm, 60°</td>
<td>5 pcs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working end: Geometry straight edge form, serrated with distal suction</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Blade Type</th>
<th>Size</th>
<th>Angle</th>
<th>Suction</th>
<th>Sterile</th>
<th>Single Use</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shaver blade, standard, serrated, closed, sterile, single use</td>
<td>4 mm, 40°</td>
<td>4 mm, 60°</td>
<td>4 mm, 90°</td>
<td>5 pcs.</td>
<td></td>
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<tr>
<td>SB4040RC</td>
<td>4 mm</td>
<td>40°</td>
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<tr>
<td>SB4060RC</td>
<td>4 mm</td>
<td>60°</td>
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<td></td>
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<tr>
<td>SB4090RC</td>
<td>4 mm</td>
<td>90°</td>
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</table>
## Turbine Application Blades

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Diameter</th>
<th>Length</th>
<th>Angle</th>
<th>Type</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB2000SA</td>
<td>Shaver blade, straight, standard, type A, sterile, single use, 5 pcs.</td>
<td>2 mm</td>
<td>22 cm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BB2000SA</td>
<td>Bipolar blade, straight, standard, type A, sterile, single use, 5 pcs.</td>
<td>2 mm</td>
<td>27 cm</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Laryngeal Application Blades

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Diameter</th>
<th>Length</th>
<th>Type</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>LB2922SS</td>
<td>Laryngeal blade, standard, superficial, sterile, single use, 5 pcs.</td>
<td>2.9 mm</td>
<td>22 cm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LB2927SS</td>
<td>Laryngeal blade, standard, superficial, sterile, single use, 5 pcs.</td>
<td>2.9 mm</td>
<td>27 cm</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Working end: Geometry double bend, 18° distal angle, edge form: smooth, sterile, single use, 5 pcs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LB4022SD</td>
<td>Laryngeal blade, standard, de-bulking, sterile, single use, 5 pcs.</td>
<td>4.0 mm</td>
<td>22 cm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LB4027SD</td>
<td>Laryngeal blade, standard, de-bulking, sterile, single use, 5 pcs.</td>
<td>4.0 mm</td>
<td>27 cm</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Working end: Geometry double bend, 18° distal angle, edge form: smooth-serrated, sterile, single use, 5 pcs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Burrs

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Diameter</th>
<th>Length</th>
<th>Angle</th>
<th>Type</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUR3015DB</td>
<td>Burr, 3 mm, diamond bullet, sterile, single use, 5 pcs.</td>
<td>15 cm</td>
<td>15°</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BUR3070DB</td>
<td>Burr, 3 mm, diamond bullet, sterile, single use, 5 pcs.</td>
<td>13.5 cm</td>
<td>70°</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BB4015DB</td>
<td>Burr, 3 mm, diamond bullet, sterile, single use, 5 pcs.</td>
<td>15 cm</td>
<td>15°</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BB4070DB</td>
<td>Burr, 3 mm, diamond bullet, sterile, single use, 5 pcs.</td>
<td>13.5 cm</td>
<td>70°</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Burr, 4 mm, diamond taper, sterile, single use, 5 pcs.</td>
<td>15 cm</td>
<td>15°</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Burr, 4 mm, diamond taper, sterile, single use, 5 pcs.</td>
<td>13.5 cm</td>
<td>70°</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BUR4015DT</td>
<td>Burr, 4 mm, diamond taper, sterile, single use, 5 pcs.</td>
<td>15 cm</td>
<td>15°</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BUR4070DT</td>
<td>Burr, 4 mm, diamond taper, sterile, single use, 5 pcs.</td>
<td>13.5 cm</td>
<td>70°</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BUR4515DB</td>
<td>Burr, 4.5 mm, diamond ball burr, sterile, single use, 5 pcs.</td>
<td>15 cm</td>
<td>15°</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BUR4520DB</td>
<td>Burr, 4.5 mm, diamond ball burr, sterile, single use, 5 pcs.</td>
<td>13.5 cm</td>
<td>20°</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BUR4215FB</td>
<td>Burr, 4.2 mm, fluted barrel, sterile, single use, 5 pcs.</td>
<td>13.5 cm</td>
<td>15°</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BUR4260FB</td>
<td>Burr, 4.2 mm, fluted barrel, sterile, single use, 5 pcs.</td>
<td>13.5 cm</td>
<td>60°</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
VISERA 4K UHD Camera Control Unit

N5402160 OTV-S400 VISERA 4K UHD camera control unit

Delivery includes:
Camera control unit, foot holder (4 pcs.), power cable, 4K cable MAJ-2253

Technical Data

Power supply
Voltage .......................................... 220 – 240 V ~
Frequency ........................................... 50/60 Hz
Power consumption ............................... 350 VA

Size
Dimensions, standard width 370 mm
height 152 mm
depth 476 mm
Dimensions, maximum width 390 mm
height 160 mm
depth 506 mm

Weight .............................................. 13.5 kg

Safety
Type of protection against electric shock …… class I
Degree of protection against electric shock
of applied part ……… TYPE BF
Directive 93/42/EEC ……… class I

Observation
Signal system ……… correspond to 4K and HD
Signal output ……… 3G-SDI, HD-SDI
Resolution ……… 4096 x 2160, 3840 x 2160,
……………………………………… 1920 x 1080

Ambient conditions
Operation ……… temperature 10 – 35 °C
relative humidity 30 – 85 %
atmospheric pressure 700 – 1060 hPa
Storage ……… temperature 5 – 40 °C
relative humidity 10 – 95 %
atmospheric pressure 700 – 1060 hPa
Transport ……… temperature -20 – 70 °C
relative humidity 10 – 95 %
atmospheric pressure 700 – 1060 hPa

4K Camera Head

N5401730 CH-S400-XZ-EB 4K Camera Head

• Clamping endoscope mount for endoscopes with an eyepiece complying with DIN 58105:2000
• One touch auto focus switch
• Three remote control switches
• CMOS image sensor
• Narrow band imaging (NBI)

Technical data
Weight ………………………………………… 280 g
Cable ………………………………………… Ø 5.2 mm x 3 m
Focal length ………………………………… f = 23.5 mm

Accessories

4K cable
N5402200 3.0 m, MAJ-2253
N5402300 8.5 m, MAJ-2254
N5402400 22 m, MAJ-2255

3G-SDI cable
N4491400 3.0 m, MAJ-2015
N4491500 8.5 m, MAJ-2016

SDI cable
N3647800 2.5 m, MAJ-1951
N3646000 8.5 m, MAJ-1912
N2486300 22 m, MAJ-1464

MAJ-438 VTR remote cable
N2486000 Foot holder MAJ-1433, 4 pcs.
**VISERA 4K UHD Light Source**

N5401560 CLV-S400 VISERA 4K UHD xenon light source

Delivery includes:
Light source, light source cable MAJ-1942, foot holders MAJ-1205 (4 pcs.), power cable

**Technical Data**

**Power supply**
- Voltage: 220 – 240 V ~
- Frequency: 50/60 Hz
- Power consumption: 500 VA

**Size**
- Dimensions, standard width 370 mm, height 150 mm, depth 474 mm
- Dimensions, maximum width 391 mm, height 162 mm, depth 521 mm

**Weight**: 15.5 kg

**Safety**
- Type of protection against electric shock: class I
- Degree of protection against electric shock of applied part: TYPE BF
- Directive 93/42/EEC: class I

**Illumination**
- Examination lamp: xenon short-arc lamp, 300 W
- Average lamp life: approx. 500 hours (on continuous use)
- Brightness control: light-path diaphragm
- Emergency lamp: halogen lamp, 12 V, 35 W

**Ambient conditions**
- Operation: temperature 10 – 40 °C, relative humidity 30 – 85 %, atmospheric pressure 700 – 1060 hPa
- Storage: temperature 5 – 40 °C, relative humidity 10 – 95 %, atmospheric pressure 700 – 1060 hPa
- Transport: temperature -20 – 70 °C, relative humidity 10 – 95 %, atmospheric pressure 700 – 1060 hPa

**Accessories**

GL2553 Foot holder MAJ-1205
4 pcs.

N3647300 Light source cable MAJ-1941
- Connects CLV-S400 to OTV-S400.

**System Chart**

[Diagram showing connections and components]
4K LCD Monitors

LMD-X310ST  LMD-X310ST
Sony 31” 4K medical monitor

LMD-X550ST  LMD-X550ST
Sony 55” 4K medical monitor

For VISERA 4K UHD system, see page XXX.

Technical Data

Power supply
- Voltage IN: 100 – 240 V ~ (LMD-X310S via AC adapter AC-300MD)
- Frequency: 50/60 Hz
- Power consumption (LMD-X550ST): 3.2 A – 1.3 A
- Voltage OUT: 12 V =, 5.0 V =

Size LMD-X310S
- Dimensions: width 753.8 mm, height 456.4 mm, depth 69.3 mm
- Weight (monitor): 11.8 kg

Size LMD-X550S
- Dimensions: width 1,264.6 mm, height 771.5 mm, depth 85.5 mm
- Weight (monitor): 35.2 kg

Display
- Type: a-Si TFT active matrix LCD
- Resolution LMD-X310ST: 4,096 x 2160 pixels
- Resolution LMD-X550ST: 3,840 x 2160 pixels
- Efficient size LMD-X310ST: 698 x 368 mm
- Efficient size LMD-X550ST: 1210 x 680 mm
- Aspect ratio LMD-X310ST: 17:9
- Aspect ratio LMD-X550ST: 16:9

Input
- HDMI: 1x HDMI
- DVI-D: 1x DVI
- 3G/HD/SD-SDI: 5x BNC
- Serial remote: 1x D-sub 9-pin (RS-232C), 1x RJ-45

Output
- DVI-D: 1x DVI
- 3G/HD/SD-SDI: 5x BNC

Safety
- Type of protection against electric shock: class I
- Ingress protection: IPx2

Ambient conditions
- Operation: temperature 10 – 35 °C, relative humidity 30 – 85 %
- atmospheric pressure 700 – 1060 hPa
- Transport and storage: temperature -20 – 60 °C, relative humidity 0 – 90 %
- atmospheric pressure 700 – 1060 hPa
WM-NP2 Mobile Workstation

Technical Data

Dimensions
- Height (endoscope in lowest position): 1370 mm
- Height (endoscope in highest position): 2140 mm
- Height (to top tray): 1169 mm
- Height (26” monitor in highest position): 2073 mm
- Width: 650 mm
- Depth: 700 mm
- Weight (incl. transformer): 85 kg (unladen)

Load capacity
- Top tray: 20 kg
- Intermediate shelves: 30.5 kg each
- Base panel: 30 kg

Equipment stored on the mobile workstation should not exceed the size of the shelf.

Castors: 4 x 125 mm, 2 with brakes

Ambient conditions
- Operation: temperature 10 – 40 °C
- Storage: temperature -40 – 70 °C
- Relative humidity: 95 % maximum
- Atmospheric pressure: 700 – 1060 hPa

Separation transformer MAJ-1648
- Input voltage: 220 – 240 V
- Frequency: 50/60 Hz
- Power input (max.): 1900 W
- Circuit breakers: 2x 9 A
- Potential equalisation terminals: 1

Standard Sets

All standard sets include:
- separation transformer MAJ-1648, power cable

Additional components in set #1:
- LCD monitor arm MAJ-1641, keyboard tray MAJ-1640
- Scope pole MAJ-1638

Additional components in set #3: none

Additional components in set #5:
- LCD monitor arm MAJ-1641, keyboard tray MAJ-1640
- Drawer unit MAJ-1643

Additional components in set #7 (only for Europe and the UK):
- LCD monitor arm MAJ-1641, keyboard tray MAJ-1640
- Extended monitor arm MAJ-1661 for small monitors

Procedure Guide: Endoscopic Surgery of the Osteomeatal Complex
**4 mm ULTRA Sinuscopes**

- Light-guide connector on top of the telescope

**WA4KS400**  
Telescope “ULTRA”, 4 mm, 0°

**WA4KS430**  
Telescope “ULTRA”, 4 mm, 30°

**WA4KS445**  
Telescope “ULTRA”, 4 mm, 45°

**WA4KS470**  
Telescope “ULTRA”, 4 mm, 70°

---

**Inverse 4 mm ULTRA Sinuscopes**

- Light-guide connector on bottom of the telescope

**WA4KS431**  
Telescope “ULTRA”, 4 mm, 30° inverse

**WA4KS446**  
Telescope “ULTRA”, 4 mm, 45° inverse

**WA4KS471**  
Telescope “ULTRA”, 4 mm, 70° inverse

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**Video Systems**

OTV-S400 VISERA 4K UHD camera control unit

---

**Accessories and Spare Parts**

**WA03300A** Light-guide cable, 2.8 mm, 3 m, CF type

**A0460** Light-guide adapter, for Storz light-guide cables

**O0332** for Wolf light-guide cables

---

**Instrument Tray**

**WA05990A** Instrument tray, for 2 telescopes

---

**Technical Data**

Outer Diameter .................................................... 4 mm

Working length
- **WA4KS400** .......................................... 176.7 mm
- **WA4KS430/-31** ................................... 176.9 mm
- **WA4KS445/-46** ................................... 177.2 mm
- **WA4KS470/-71** .................................... 178.2 mm

Direction of view
- **WA4KS400** ...................................................... 0°
- **WA4KS430/-31** ............................................. 30°
- **WA4KS445/-46** ............................................ 45°
- **WA4KS470/-71** ............................................. 70°

Field of view ........................................................... 93°
**INSTACLEAR Lens Cleaner**

**Power Console**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCCONS100</td>
<td>INSTACLEAR power console</td>
</tr>
</tbody>
</table>

**Technical Data**

- **Power supply**
  - Voltage: 100 – 240 V ~
  - Frequency: 50/60 Hz
  - Maximum input power: 60 VA
  - Power fuse: 250 V, 0.63 A, 5x20 (2)

- **Size**
  - Width x depth x height: 385 x 330 x 330 mm
  - Weight: 3.3 kg

- **Classification**
  - Protection against electric shock: type B, class I
  - Directive 93/42/EEC: class IIa

**Ambient conditions**

- **Operation**
  - Temperature: 10 – 35 °C
  - Relative humidity: 10 – 85%
  - Atmospheric pressure: 50 – 106 kPa

- **Transport and storage**
  - Temperature: -25 – 60 °C
  - Relative humidity: 10 – 85%
  - Atmospheric pressure: 50 – 106 kPa

---

**Suction Module**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDSM220V</td>
<td>DIEGO ELITE suction module, 220 VAC</td>
</tr>
</tbody>
</table>

**Technical Data**

- **Power supply**
  - Voltage (MDSM220V): 220 – 240 V ~
  - Frequency: 50/60 Hz
  - Maximum input power: 264 VA
  - Power fuse: 4 A / 2 A

- **Size**
  - Width x depth x height: 420 x 470 x 356 mm
  - Weight: 11.5 kg

- **Classification**
  - Protection against electric shock: type BF, class I
  - Directive 93/42/EEC: class IIa

---

**Foot Switch**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCFP100</td>
<td>INSTACLEAR foot switch</td>
</tr>
</tbody>
</table>

**Technical Data**

- **Size**
  - Width x depth x height: 150 x 150 x 35 mm
  - Weight: 0.9 kg

- **Classification**
  - Ingress protection rating: IPX8 (except plug)
  - Directive 93/42/EEC: class IIa

---

**Tube Set**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCTS100S</td>
<td>INSTACLEAR tubeset, standard, sterile, single use, 5 pcs.</td>
</tr>
</tbody>
</table>
Sheaths

INSTACLEAR sheaths

Sheaths,
for OLYMPUS ULTRA endoscopes
LCS4K00UNOL 4x150 mm, OLYMPUS ULTRA, 0° Uni. Light
LCS4K30BTOL 4x150 mm, OLYMPUS ULTRA, 30° Top Light
LCS4K30TPOL 4x150 mm, OLYMPUS ULTRA, 30° Bottom Light
LCS4K45BTOL 4x150 mm, OLYMPUS ULTRA, 45° Top Light
LCS4K45TPOL 4x150 mm, OLYMPUS ULTRA, 45° Bottom Light
LCS4K70BTOL 4x150 mm, OLYMPUS ULTRA, 70° Top Light
LCS4K70TPOL 4x150 mm, OLYMPUS ULTRA, 70° Bottom Light

Sheaths,
for OLYMPUS HD endoscopes
LCS1500UNOL 4x150 mm, OLYMPUS, 0° Uni. Light
LCS1530TPOL 4x150 mm, OLYMPUS, 30° Top Light
LCS1530BTOL 4x150 mm, OLYMPUS, 30° Bottom Light
LCS1545TPOL 4x150 mm, OLYMPUS, 45° Top Light
LCS1545BTOL 4x150 mm, OLYMPUS, 45° Bottom Light
LCS1570TPOL 4x150 mm, OLYMPUS, 70° Top Light
LCS1570BTOL 4x150 mm, OLYMPUS, 70° Bottom Light

Sheaths,
for STORZ endoscopes
LCS1800UNOL 4x180 mm, STORZ, 0° Uni. Light
LCS1830TPOL 4x180 mm, STORZ, 30° Top Light
LCS1830BTOL 4x180 mm, STORZ, 30° Bottom Light
LCS1845TPOL 4x180 mm, STORZ, 45° Top Light
LCS1845BTOL 4x180 mm, STORZ, 45° Bottom Light
LCS1870TPOL 4x180 mm, STORZ, 70° Top Light
LCS1870BTOL 4x180 mm, STORZ, 70° Bottom Light
CELON ELITE ESG-200

WA90002A Electrosurgical generator “CELON ELITE ESG-200”, “B type”

Radiofrequency based power control unit for RFITT and standard electrosurgical procedures. Controls Celon bipolar applicators and Celon Elite ProCut system. Continuous tissue monitoring allows precise and safe tissue ablation for a variety of ENT indications. Settings can be personalized to simplify the everyday work routine for the ENT specialist and medical staff.

Delivery includes:
Electrosurgical generator, foot switch

Technical Data
Power supply
Voltage...........................................220 – 240 V ~
Maximum input power..........................650 VA

Dimensions
Width...............................................295 mm
Height.............................................115 mm
Depth.............................................400 mm
Weight...........................................6.61 kg

Classification
Protection against electric shock .... type CF, class I
Directive 93/42/EEC .........................class IIb

Output
High frequency functions ..........monopolar/bipolar
High frequency ......................... 356 kHz ±20%
Maximum high frequency power .............120 W
All modes ....................................25% duty cycle
(e.g. 10 s activated, 30 s deactivated)

Ambient conditions
Operation temperature .................10 – 40 °C
relative humidity 30 – 85 %
atmospheric pressure 70 – 106 hPa
Transport and storage .... temperature -25 – 60 °C
relative humidity 10 – 85 %
atmospheric pressure 50 – 106 hPa

CelonProBreath Applicator

WB990007 Bipolar applicator “CelonProBreath”

for use with CELON ELITE ESG-200, sterile, single use, 5 pcs.

Application:
Indicated for ablation and coagulation of soft tissue in otorhinolaryngological surgery including submucosal tissue shrinkage for nasal airway obstruction by reduction of hypertrophic nasal turbinates.

Technical Data
Applicator tip..............................conical
Electrode diameter..........................1.1 mm
Electrode length............................100 mm
Handle length..............................140 mm
Cable length..............................3 m
Power range..............................0 – 25 W

CelonProSleep plus Applicator

WB990008 Bipolar applicator “CelonProSleep plus”

for use with CELON ELITE ESG-200, sterile, single use, 5 pcs.

Application:
Ablation and coagulation of soft tissue in otorhinolaryngological surgery including submucosal tissue shrinkage and tissue coagulation in the soft palate for the treatment of snoring, in the palatine tonsils for the treatment of tonsillar hypertrophy, and in the root of the tongue for the treatment of mild obstructive sleep apnoea (OSAS).

Technical Data
Applicator tip..............................triangular
Electrode diameter..........................1.3 mm
Electrode length............................140 mm
Cable length..............................3 m
Power range..............................0 – 25 W
CEلون ELITE ProCut System

The CELON ProCut functionality enables monopolar cutting with the advantages of bipolar technology.
- Gentle and precise cutting
- Cutting with constant spark intensity in various tissues
- Short treatment time as return electrode is not needed
- RF current remains confined to the tissue area undergoing treatment
- Can be used in an outpatient setting as well as the OR

WB990278 Handpiece “CELON ELITE ProCut”

WB990177 CelonProCut-Electrode Type1
(5 pcs) • sterile, single use

WB990202 CelonProCut-Gripping Forceps, angled
• monopolar

CelonForceps

Bipolar coagulation forceps for use with CELON ELITE ESG-200

WB990033 CelonForceps, angled
(19cm, tip 2mm)

WB990034 CelonForceps, bayonet
(20cm, tip 1mm)

System Chart

WB990177

WB990202 WB990278

CEلون ELITE ESG-200
### V. Eicken Antrum Irrigation Cannulas

<table>
<thead>
<tr>
<th>Item Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT149602</td>
<td>Cannula, acc. to Eicken, with Luer-Lock, long curved, size 2.5 x 145</td>
</tr>
<tr>
<td>WT149603</td>
<td>Cannula, acc. to Eicken, with Luer-Lock, long curved, size 3 x 145</td>
</tr>
<tr>
<td>WT149604</td>
<td>Cannula, acc. to Eicken, with Luer-Lock, long curved, size 4 x 145</td>
</tr>
<tr>
<td>WT149612</td>
<td>Cannula, acc. to Eicken, with Luer-Lock, short curved, size 2.5 x 145</td>
</tr>
<tr>
<td>WT149613</td>
<td>Cannula, acc. to Eicken, with Luer-Lock, short curved, size 3 x 145</td>
</tr>
<tr>
<td>WT149614</td>
<td>Cannula, acc. to Eicken, with Luer-Lock, short curved, size 4 x 145</td>
</tr>
<tr>
<td>WT149702</td>
<td>Cannula, acc. to Eicken, with Luer-Lock, long curved, malleable, size 2.5 x 145</td>
</tr>
<tr>
<td>WT149703</td>
<td>Cannula, acc. to Eicken, with Luer-Lock, long curved, malleable, size 3 x 145</td>
</tr>
<tr>
<td>WT149704</td>
<td>Cannula, acc. to Eicken, with Luer-Lock, long curved, malleable, size 4 x 145</td>
</tr>
</tbody>
</table>

### Antrum and Frontal Sinus Rasps

<table>
<thead>
<tr>
<th>Item Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT508101</td>
<td>Rasp, Vienna type, with trocar tip, 18 cm total length, diameter size 6 mm</td>
</tr>
<tr>
<td>WT518110</td>
<td>Rasp, acc. to Wigand, curved, 2.8/2.3 mm width, backward cutting, 21 cm total length</td>
</tr>
<tr>
<td>WT518111</td>
<td>Rasp, acc. to Wigand, strong</td>
</tr>
<tr>
<td>WT518111</td>
<td>Rasp, acc. to Wigand, slender</td>
</tr>
<tr>
<td>WT508500</td>
<td>Rasp, acc. to Watson-Williams, blunt, 3.7 mm width, backward cutting, 23 cm total length</td>
</tr>
<tr>
<td>WT508500</td>
<td>Rasp, acc. to Watson-Williams, size 230</td>
</tr>
</tbody>
</table>
## Frontal Sinus Ostium Seeker

**Probe**
double-ended, curved,
total length 21 cm, ball size 1.3 mm

| WT518725 | Probe, double-ended, curved, size 210 |

| WT230725 | Probe, double-ended |

## Ritter-Halle Frontal Sinus Bougie

**Dilator, acc. to Ritter-Halle**
14.5 cm total length, various diameters (mm)

| WT507025 | Dilator, acc. to Ritter-Halle, size 2.5 x 145 |
| WT507030 | Dilator, acc. to Ritter-Halle, size 3.0 x 145 |
| WT507040 | Dilator, acc. to Ritter-Halle, size 4.0 x 145 |
| WT507050 | Dilator, acc. to Ritter-Halle, size 5.0 x 145 |

## Maxillary Sinus Ostium Seeker

**Probe**
double ended, ball-shaped ends,
1.2 mm ball size, 2 mm diameter,
19 cm total length

| WT518619 | Probe, double-ended, ball-shaped ends, size 1.2 x 2.0 |

Lichtwitz Antrum Trocar Needles

Trocar, acc. to Lichtwitz
Essentially facilitate duraplasty during endonasal surgery.
10 cm working length, various outer diameter sizes (mm)

WT149315 Trocar, acc. to Lichtwitz, size 1.5 x 100
WT149318 Trocar, acc. to Lichtwitz, size 1.8 x 100
WT149320 Trocar, acc. to Lichtwitz, size 2.0 x 100

Draf Micro Elevators

Raspatory, acc. to Draf
sharp, 25 cm length, various widths (mm),
15 cm working length

WT339001 Raspatory, acc. to Draf, micro,
slightly curved, size 1.0 x 250
WT339002 Raspatory, acc. to Draf, micro,
slightly curved, size 3.0 x 250
WT339003 Raspatory, acc. to Draf, micro,
strongly curved size 3.0 x 250
WT339004 Raspatory, acc. to Draf, micro,
curved size 4.0 x 250

Freer Elevator

Elevator, acc. to Freer
sharp/blunt, 4.5 mm width,
20 cm total length

WT315000 Elevator, acc. to Freer, double-ended,
american type, size 200
WT230583 Elevator, acc. to Freer, double-ended, size 180

Gorney Elevator

Elevator, acc. to Gorney
19 cm total length, 3 mm tip

WT405800 Elevator, acc. to Gorney, with suction channel
size 3.0 x 190

Sickle Knives

Sickle knife
double cutting, various tips,
19 cm total length

WT518301 Sickle knife, pointed, size 190
WT518302 Sickle knife, blunt, size 190
WT518303 Sickle knife, blunt, curved left, size 190
WT518304 Sickle knife, blunt, curved right, size 190

Sickle knife “Richards”
19 cm total length

WT230580 Sickle knife “Richards”, blunt, size 190
WT230582 Sickle knife “Richards”, sharp, size 190

Sickle knife, acc. to Plester
16,5 total length, 5 mm blade

WT253600 Sickle knife, acc. to Plester, straight, size 165
### Moriyma Fontanelle Knife

**Knife, acc. to Moriyama**
- Round tip, curved, 20 cm total length, 6 mm width

**WT326820** Knife, acc. to Moriyama, curved, size 200

### Draf Knives (cont.)

#### Incision knife, acc. to Draf
- 19 cm length

**WT339401** Incision knife, acc. to Draf, straight, size 190
**WT339402** Incision knife, acc. to Draf, bayonet shaped, size 190

#### Round knife, acc. to Draf
- 19 cm length, various diameters (mm)

**WT339201** Round knife, acc. to Draf, angled, straight handle, size 1.5 x 190
**WT339202** Round knife, acc. to Draf, bayonet shaped, size 1.5 x 190
**WT339301** Round knife, acc. to Draf, straight handle, size 2.0 x 190
**WT339302** Round knife, acc. to Draf, bayonet shaped, size 2.0 x 190

#### Sickle knife, acc. to Draf
- 19 cm total length, 10 mm blade

**WT339101** Sickle knife, acc. to Draf, straight, size 190
**WT339102** Sickle knife, acc. to Draf, bayonet shaped, size 190

**WT339301** Round knife, acc. to Draf, bayonet shaped, size 2.0 x 190

### Draf Knives (cont.)

#### Round knife, acc. to Draf
- 19 cm length, various diameters (mm)

**WT339201** Round knife, acc. to Draf, angled, straight handle, size 1.5 x 190
**WT339202** Round knife, acc. to Draf, bayonet shaped, size 1.5 x 190
**WT339301** Round knife, acc. to Draf, straight handle, size 2.0 x 190
**WT339302** Round knife, acc. to Draf, bayonet shaped, size 2.0 x 190

#### Incision knife, acc. to Draf
- 19 cm length

**WT339401** Incision knife, acc. to Draf, straight, size 190
**WT339402** Incision knife, acc. to Draf, bayonet shaped, size 190

#### Sickle knife, acc. to Draf
- 19 cm total length, 10 mm blade

**WT339101** Sickle knife, acc. to Draf, straight, size 190
**WT339102** Sickle knife, acc. to Draf, bayonet shaped, size 190

**WT339302** Round knife, acc. to Draf, bayonet shaped, size 2.0 x 190
Coakley Antrum Curettes

Curette, acc. to Coakley
17 cm total length, 7.5 mm width
WT503001 Curette, acc. to Coakley, oval, slightly curved, size 7.5 x 170
WT503002 Curette, acc. to Coakley, oval, strong curved, size 7.5 x 170
WT503003 Curette, acc. to Coakley, oval, retrograde curved, size 7.5 x 170
WT503006 Curette, acc. to Coakley, triangular, strong curved, size 7.5 x 170

Curette, acc. to Coakley
17 cm total length, 6 mm width
WT503004 Curette, acc. to Coakley, oval, slightly curved, size 6.0 x 170
WT503005 Curette, acc. to Coakley, oval, strong curved, size 6.0 x 170

Curette, acc. to Coakley
19.5 cm total length
WT230585 Antrum curette, acc. to Coakley, forward cutting, size 195

Antrum Curettes

Curette
slightly curved, various oval sizes (mm), 19 cm total length
WT518001 Curette, oval, size 7.0 x 190
WT518002 Curette, oval, size 8.0 x 190
WT518003 Curette, oval, size 9.0 x 190

Curette
19 cm total length, diameter size (mm)
WT518203 Curette, forward cutting, small, size 6.8 x 190
WT518204 Curette, backward cutting, small, size 6.8 x 190

Curette
10 cm total length, 7.0 mm width
WT230715 Curette, acc. to Bent, curved, oval, size 7.0 x 10
Faulkner Antrum Curette

Curette, acc. to Faulkner
double ended, 21 cm total length,
5.5 and 7.5 mm inner diameter

WT504000 Curette, acc. to Faulkner,
double-ended, size 5.5/7.5 x 210

Halle Antrum Curette

Curette, acc. to Halle
malleable,
21 cm total length,
various oval sizes (length, width, mm)

WT506001 Curette, acc. to Halle, malleable,
size 8.0 x 5.5 210
WT506002 Curette, acc. to Halle, malleable,
size 9.0 x 6.0 210
WT506003 Curette, acc. to Halle, malleable,
size 10 x 7.0 210

Sinuscopy Trocars

Trocar
for use with 2.7 mm telescopes,
oblique beak,
7 cm cannula length, 3.4 mm outer diameter

WT518503 Trocar, oblique, for endoscopes,
size 2.7 x 70

Trocar
for use with 3 mm telescopes,
7 cm cannula length, 4 mm outer diameter

WT518504 Trocar, oblique, for endoscopes,
size 3.0 x 70

Trocar
for use with 4 mm telescopes,
5 mm outer diameter, 8 cm cannula length

WT518400 Trocar, beak-shaped,
for endoscopes, size 4 x 80
WT518500 Trocar, oblique,
for endoscopes, size 4 x 80
### Frazier Suction Tube

**Suction tube, acc. to Frazier**

- with mandrin, stainless, 9 cm working length, various diameters (mm)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT210008</td>
<td>Suction tube, acc. to Frazier, with cut-off, size 2.7 x 90</td>
</tr>
<tr>
<td>WT210010</td>
<td>Suction tube, acc. to Frazier, with cut-off, size 3.3 x 90</td>
</tr>
<tr>
<td>WT210012</td>
<td>Suction tube, acc. to Frazier, with cut-off, size 4.0 x 90</td>
</tr>
<tr>
<td>WT210015</td>
<td>Suction tube, acc. to Frazier, with cut-off, size 5.0 x 90</td>
</tr>
</tbody>
</table>

- Mandrin, for suction tube WT210015, size 0.6 (not shown)

**Suction tube, acc. to Frazier**

- ball-ended, 9 cm working length, various diameter sizes (mm)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT210115</td>
<td>Suction tube, acc. to Frazier, ball-ended, with cut-off, size 2.0 x 90</td>
</tr>
<tr>
<td>WT210116</td>
<td>Suction tube, acc. to Frazier, ball-ended, with cut off, size 2.7 x 90</td>
</tr>
<tr>
<td>WT210118</td>
<td>Suction tube, acc. to Frazier, ball-ended, with cut off, size 3.3 x 90</td>
</tr>
<tr>
<td>WT210120</td>
<td>Suction tube, acc. to Frazier, ball-ended, with cut off, size 5.0 x 90</td>
</tr>
</tbody>
</table>

### Frazier Suction Tube (2)

**Suction tube, acc. to Frazier**

- graduated at 5 – 9 cm, 9 cm working length, various diameters (mm)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT211006</td>
<td>Suction tube, acc. to Frazier, with scaling, with cut-off, size 2.0 x 90</td>
</tr>
<tr>
<td>WT211008</td>
<td>Suction tube, acc. to Frazier, with scaling, with cut-off, size 2.7 x 90</td>
</tr>
<tr>
<td>WT211009</td>
<td>Suction tube, acc. to Frazier, with scaling, with cut-off, size 3.0 x 90</td>
</tr>
<tr>
<td>WT211010</td>
<td>Suction tube, acc. to Frazier, with scaling, with cut-off, size 3.3 x 90</td>
</tr>
<tr>
<td>WT211012</td>
<td>Suction tube, acc. to Frazier, with scaling, with cut-off, size 4.0 x 90</td>
</tr>
<tr>
<td>WT211015</td>
<td>Suction tube, acc. to Frazier, with scaling, with cut-off, size 5.0 x 90</td>
</tr>
</tbody>
</table>

**Suction tube, acc. to Ferguson-Frazier**

- strongly curved, 10 cm working length, various diameters (mm)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT211806</td>
<td>Suction tube, acc. to Ferguson-Frazier, with cut-off, strongly curved, size 2.0 x 100</td>
</tr>
<tr>
<td>WT211808</td>
<td>Suction tube, acc. to Ferguson-Frazier, with cut-off, strongly curved, size 2.7 x 100</td>
</tr>
<tr>
<td>WT211809</td>
<td>Suction tube, acc. to Ferguson-Frazier, with cut-off, strongly curved, size 3.0 x 100</td>
</tr>
<tr>
<td>WT211810</td>
<td>Suction tube, acc. to Ferguson-Frazier, with cut-off, strongly curved, size 3.3 x 100</td>
</tr>
<tr>
<td>WT211812</td>
<td>Suction tube, acc. to Ferguson-Frazier, with cut-off, strongly curved, size 4.0 x 100</td>
</tr>
<tr>
<td>WT211814</td>
<td>Suction tube, acc. to Ferguson-Frazier, with cut-off, strongly curved, size 5.0 x 100</td>
</tr>
</tbody>
</table>
**Kahn-Frazier Frontal Sinus Tube**

Suction tube, acc. to Kahn-Frazier
25 mm angled tip, slightly curved, cut-off hole, 12 cm working length, 3.3 mm diameter

WT211610 Suction tube, acc. to Kahn-Frazier, malleable, malleable, with cut-off, size 3.3 x 120

---

**Frazier Suction Tube (3)**

Suction tube, acc. to Frazier
with cut-off hole, with mandrin, Luer, closed blunt distal end with holes, 15 cm working length, various diameters (mm)

WT350003 Suction tube, acc. to Frazier, distal tip closed, holes on the side, size 3.0
WT350004 Suction tube, acc. to Frazier, distal tip closed holes on the side, size 4.0

---

**Gorney Suction Elevator**

Elevator, acc. to Gorney
with mandrin, 3 mm tip, 19 cm length

WT405800 Elevator, acc. to Gorney, with suction channel, size 3.0 x 190
Retractors and Spatulas

**Retractor, acc. to Hayek**
18 cm total length, tip 14 x 21 mm, serrated

WT500000 Retractor, acc. to Hayek, size 14 x 21 180

**Retractor, acc. to Langenbeck**
various working lengths (mm),
various diameters (mm),
21 cm total length

WT502501 Retractor, acc. to Langenbeck, size 35 x 7.0 210
WT502502 Retractor, acc. to Langenbeck, size 35 x 10 210
WT502503 Retractor, acc. to Langenbeck, size 35 x 15 210
WT502504 Retractor, acc. to Langenbeck, size 35 x 20 210
WT502505 Retractor, acc. to Langenbeck, size 40 x 11 210

**Retractor**
orbital, double-ended,
25 cm total length, front/back width (mm)

WT507100 Retractor, orbital , size 22/26 250

**Spatula, acc. to Tapia**
perforated basket,
9 cm total length, various widths (mm)

WT541009 Spatula, acc. to Tapia, with perforated basket,
size 20 x 90
WT541012 Spatula, acc. to Tapia, with perforated basket,
size 25 x 90

Tongue Depressors

**Tongue depressor**
flexible,
20 cm total length, various widths (mm)

WT507212 Tongue depressor, flexible, size 12 x 200
WT507217 Tongue depressor, flexible, size 17 x 200

**Richards tongue depressor**
ribbon type, malleable,
14.5 cm total length, 16 mm width

WT550515 Tongue depressor, acc. to Richards,
ribbon type, malleable, size 16 x 145
**Fokkens Biopsy Forceps**

**Punch forceps, acc. to Fokkens**
- straight, 3 mm cutting width, round, 8 cm working length
- WT336000 Punch forceps, acc. to Fokkens, for biopsies, cupped jaws, straight, size 3
- upcurved, 3 mm cutting width, round, 11 cm working length
- WT336045 Punch forceps, acc. to Fokkens, for biopsies, cupped jaws, curved up, size 3

**Antrum Grasping Forceps**

**Grasping forceps**
- finger post facilitates rotation, retrograde opening jaws 120°, 10 cm working length, 360° rotatable

- WT515510 Grasping forceps, rotatable, retrograde opening jaws, curved down, size 100
- for endonasal removal of cysts and polyps, retrograde opening jaws 120°, 10 cm working length

- WT515500 Grasping forceps, retrograde opening jaws, curved down, size 100
**Biopsy and Grasping Forceps**

**Grasping forceps**
- Oval cupped, double-action jaws,
- 15 cm working length, 1.5 mm shaft diameter,
- 2.5 mm jaws diameter

WT515000 Grasping forceps, for biopsies, double-action jaws, straight, size 2.5 x 150

**Grasping forceps**
- Oval cupped, double-action jaws,
- 12 cm working length, 3 mm jaws diameter,
- Shaft angled down 70°

WT515070 Grasping forceps, for biopsies, oval-cupped, double-action jaws, size 3.0 x 120

**Grasping forceps**
- Oval cupped, double-action jaws,
- 11 cm working length, 3 mm jaws diameter,
- Shaft angled down 110°

WT515110 Grasping forceps, for biopsies, oval-cupped, double-action jaws, size 3 x 11

**Biopsy and Grasping Forceps (2)**

**Grasping forceps**
- Malleable shaft end, double-action jaws,
- Oval cupped, opening vertically,
- 18 cm working length, 4 mm jaws diameter

WT515005 Grasping forceps, for biopsies, malleable shaft, double-action, size 4.0 x 180

**Biopsy forceps**
- Oval cupped, double-action jaws,
- 18 cm working length, 2.6 mm diameter,
- 110° upturned

WT335110 Biopsie forceps, oval cups, double-action jaws, horizontal opening, size 180

WT335111 Biopsie forceps, oval cups, double-action jaws, vertical opening, size 180
### Biopsy and Grasping Forceps (3)

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>WT335170</td>
<td>Biopsy forceps, oval cups, double-action jaws, horizontal opening, size 195</td>
</tr>
<tr>
<td>WT335171</td>
<td>Biopsy forceps, oval cups, double-action jaws, vertical opening, size 195</td>
</tr>
</tbody>
</table>

### Biopsy forceps (4)

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>WT335114</td>
<td>Biopsy forceps, oval cups, double-action jaws, horizontal opening, size 220</td>
</tr>
<tr>
<td>WT335124</td>
<td>Biopsy forceps, oval cups, double-action jaws, vertical opening, size 220</td>
</tr>
</tbody>
</table>

### Biopsy forceps

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT230711</td>
<td>Biopsy forceps, double spoon, curved 70°, short, horizontal opening, size 2.0</td>
</tr>
<tr>
<td>WT230712</td>
<td>Biopsy forceps, double spoon, curved 70°, short, vertical opening, size 2.0</td>
</tr>
<tr>
<td>WT230710</td>
<td>Biopsy forceps, double spoon, curved 70°, horizontal opening, size 2.0</td>
</tr>
</tbody>
</table>

### Biopsy forceps

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT230578</td>
<td>Biopsy forceps, double spoon, curved 110°</td>
</tr>
</tbody>
</table>

### Punch forceps, for biopsies

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>WT336300</td>
<td>Punch forceps, for biopsies, through-cutting, straight, size 2.0</td>
</tr>
</tbody>
</table>

### Biopsy forceps

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT230577</td>
<td>Biopsy forceps, through-cutting, curved 70°, vertical opening, size 2.0</td>
</tr>
</tbody>
</table>

### Binner Polyp Grasping Forceps

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>WT335300</td>
<td>Grasping forceps, acc. to Binner, for polyps, 80° upturned, opening horizontally</td>
</tr>
<tr>
<td>WT335304</td>
<td>45° upturned, opening horizontally</td>
</tr>
<tr>
<td>WT335301</td>
<td>80° upturned, shaft curved left</td>
</tr>
<tr>
<td>WT335302</td>
<td>80° upturned, shaft curved right</td>
</tr>
</tbody>
</table>
**Biopsy Suction Punches**

_**Suction punch forceps**_
through-cutting, with suction channel, straight/30° upcurved,
10 cm working length, 2 mm cutting width

WT335200 Suction punch forceps, through-cutting, straight, size 2.0 x 100
WT335201 Suction punch forceps, through-cutting, upcurved, size 2.0 x 100

**Blakesley Suction Punched**

_**Suction punch, acc. to Blakesley**_
straight, with suction channel,
4 mm diameter,
10 cm working length, various cutting lengths (mm)

WT336800 Suction punch, acc. to Blakesley, straight, size 2.5 x 100
WT336801 Suction punch, acc. to Blakesley, straight, size 3.5 x 100

**Suction punch, acc. to Blakesley**
with suction channel, 30° upcurved,
4 mm diameter,
10 cm working length, various cutting lengths (mm)

WT336900 Suction punch, acc. to Blakesley, curved upward, size 2.5 x 100
WT336901 Suction punch, acc. to Blakesley, curved upward, size 3.5 x 100

**Takahashi Suction Punched**

_**Suction punch, acc. to Takahashi**_
for biopsy and grasping, with suction channel,
straight/30° upcurved,
10 cm working length, 4 mm shaft diameter

WT338001 Suction punch, acc. to Takahashi, curved upward, size 2.5 x 100
WT338101 Suction punch, acc. to Takahashi, curved up, size 3.5 x 100

**Suction forceps, acc. to Blakesley**
for biopsy and grasping, suction channel,
11 cm working length, various cutting lengths (mm)

WT337001 Suction forceps, acc. to Blakesley, straight, size 3.5 x 110
WT337002 Suction forceps, acc. to Blakesley, straight, size 3.5 x 110
WT337003 Suction forceps, acc. to Blakesley, straight, size 5.0 x 110

**Suction forceps, acc. to Blakesley**
for biopsy and grasping, suction channel, 45° upturned

WT337101 Suction forceps, acc. to Blakesley, curved, size 3.5 x 110
WT337102 Suction forceps, acc. to Blakesley, curved, size 4.0 x 110
WT337103 Suction forceps, acc. to Blakesley, curved, size 5.0 x 110
Frontal Sinus Punch Forceps

**Punch forceps**
- Double-action jaws, cupped, 2 mm cutting diameter, 14.5 cm working length, 55° upturned

WT336201 Punch forceps, with cupped jaws, through-cutting, curved up 55, size 2.0 x 145

WT336202 Punch forceps, with cupped jaws, through-cutting, curved up 55, size 145

**Punch forceps**
- Double-action jaws, cupped, 14.5 cm working length, 90° upturned

WT336203 Punch forceps, with cupped jaws, through-cutting, curved up 90, size 145

WT336204 Punch forceps, with cupped jaws, through-cutting, curved up 90, size 145

55° Giraffe Forceps

**Grasping forceps**
- Double-action jaws, cupped, 23 cm working length, 55° upturned

WT335403 Grasping forceps, with cupped jaws, vertical opening, curved 55, size 4 x 230

WT335404 Grasping forceps, with cupped jaws, horizontal opening, curved 55, size 4 x 230

**Grasping forceps**
- Double-action jaws, cupped, 23 cm working length, 55° upturned

WT335401 Grasping forceps, with cupped jaws, vertical opening, curved 55, size 3 x 230

WT335402 Grasping forceps, with cupped jaws, horizontal opening, curved 55, size 3 x 230

**Grasping forceps**
- Double-action jaws, cupped, 23 cm working length, 55° upturned

WT335413 Grasping forceps, with cupped jaws, vertical opening, curved 55, size 4 x 230

WT335414 Grasping forceps, with cupped jaws, horizontal opening, curved 55, size 4 x 230

90° Giraffe Forceps

**Grasping forceps**
- Double-action jaws, cupped, 22 cm working length, 90° upturned

WT335405 Grasping forceps, with cupped jaws, vertical opening, curved 90, size 2 x 220

WT335406 Grasping forceps, with cupped jaws, horizontal opening, curved 90, size 2 x 220

**Grasping forceps**
- Double-action jaws, cupped, 22 cm working length, 90° upturned

WT335409 Grasping forceps, with cupped jaws, vertical opening, curved 90, 4 x 220

WT335410 Grasping forceps, with cupped jaws, horizontal opening, curved 90, 4 x 220

Punch Forceps

**Punch forceps, for frontal sinus**
- 12.5 cm working length, various diameters (mm)

WT000884 Punch forceps, for frontal sinus, small, size 2.0 x 125

WT000885 Punch forceps, for frontal sinus, standard, size 3.0 x 125

WT000886 Punch forceps, for frontal sinus, large, size 5.0 x 125
**Blakesley Nasal Forceps**

**Nasal forceps, acc. to Blakesley**
straight, 11.5 cm working length, various jaws widths (mm)

- WT330000 Nasal forceps, acc. to Blakesley, straight, size 3.0 x 115
- WT330001 Nasal forceps, acc. to Blakesley, straight, size 3.5 x 115
- WT330002 Nasal forceps, acc. to Blakesley, straight, size 4.0 x 115
- WT330003 Nasal forceps, acc. to Blakesley, straight, size 5.0 x 115
- WT330004 Nasal forceps, acc. to Blakesley, straight, size 6.0 x 115

**Nasal forceps, acc. to Blakesley**
45° upcurved, 11.5 cm working length, various jaws widths (mm)

- WT330100 Nasal forceps, acc. to Blakesley, curved up 45, size 3.0 x 115
- WT330101 Nasal forceps, acc. to Blakesley, curved up 45, size 3.5 x 115
- WT330102 Nasal forceps, acc. to Blakesley, curved up 45, size 4.0 x 115
- WT330103 Nasal forceps, acc. to Blakesley, curved up 45, size 5.0 x 115
- WT330104 Nasal forceps, acc. to Blakesley, curved up 45, size 6.0 x 115

**Nasal forceps, acc. to Blakesley**
90° upcurved, 10 cm working length, various jaws sizes (mm)

- WT330200 Nasal forceps, acc. to Blakesley, curved up 90, size 3.0 x 100
- WT330201 Nasal forceps, acc. to Blakesley, curved up 90, size 3.5 x 100
- WT330202 Nasal forceps, acc. to Blakesley, curved up 90, size 4.0 x 100
- WT330203 Nasal forceps, acc. to Blakesley, curved up 90, size 5.0 x 100

**Blakesley Nasal Forceps (2)**

**Nasal forceps, acc. to Blakesley**
straight, 15 cm working length, various jaws sizes (mm)

- WT331501 Nasal forceps, acc. to Blakesley, straight, size 3.5 x 150
- WT331502 Nasal forceps, acc. to Blakesley, straight, size 4.0 x 150
- WT331503 Nasal forceps, acc. to Blakesley, straight, size 5.0 x 150

**Nasal forceps, acc. to Blakesley**
45° upcurved, 15 cm working length, various jaws sizes (mm)

- WT331601 Nasal forceps, acc. to Blakesley, 45 curved up, size 3.5 x 150
- WT331602 Nasal forceps, acc. to Blakesley, 45 curved up, size 4.0 x 150

**Nasal forceps, acc. to Blakesley**
90° upcurved, 15 cm working length, various jaws sizes (mm)

- WT331701 Nasal forceps, acc. to Blakesley, 90 curved up, size 3.5 x 150
- WT331702 Nasal forceps, acc. to Blakesley, 90 curved up, size 4.0 x 150

**Nasal forceps, acc. to Blakesley**
upcurved, 17.5 cm working length, 3.6 mm jaws size

- WT230708 Nasal forceps, acc. to Blakesley, curved up, size 3.6 x 175

**Nasal forceps, acc. to Blakesley**
straight, 17 cm working length, various jaws sizes

- WT342100 Nasal forceps, acc. to Blakesley, straight, size 0, 170
- WT342101 Nasal forceps, acc. to Blakesley, straight, size 1, 170

**Nasal forceps, acc. to Blakesley**
45° upcurved, 17 cm working length, various jaws sizes

- WT342200 Nasal forceps, acc. to Blakesley, 45 curved up, size 0, 170
- WT342201 Nasal forceps, acc. to Blakesley, 45 curved up, size 1, 170

Procedure Guide: Endoscopic Surgery of the Osteomeatal Complex 45
**Blakesley Antrum Forceps**

- **Nasal forceps, acc. to Blakesley**
  - 9.5 x 4.5 mm, 10 cm working length

- WT330500 Nasal forceps, acc. to Blakesley with tubular shaft, curved to left, size 100
- WT330600 Nasal forceps, acc. to Blakesley with tubular shaft, curved to right, size 100

**Blakesley Nasal Forceps, rotatable**

- **Nasal forceps, acc. to Blakesley**
  - 360° rotatable, 45° upturned, 11 cm working length, various jaws sizes (mm)

- WT330901 Nasal forceps, acc. to Blakesley, rotatable. 45 curved up, size 3.5 x 110
- WT330902 Nasal forceps, acc. to Blakesley, rotatable. 45 curved up, size 4.0 x 110
- WT330903 Nasal forceps, acc. to Blakesley, rotatable. 45 curved up, size 5.0 x 110

**Weil-Blakesley Nasal Forceps**

- **Nasal forceps, acc. to Weil-Blakesley**
  - 45° upcurved, 4.8 mm jaws size

- WT230731 Nasal forceps, acc. to Weil-Blakesley, through-cutting, upcurved 45, size 4.8

**Hartmann Nasal Cutting Forceps**

- **Hartmann nasal cutting forceps**, straight shaft, 11 cm working length, various basket diameters (mm)

- WT329001 Hartmann nasal cutting forceps, with basket, size 5.0 x 110
- WT329002 Hartmann nasal cutting forceps, with basket, size 8.0 x 110
- WT329003 Hartmann nasal cutting forceps, with basket, size 9.0 x 110
- WT329004 Hartmann nasal cutting forceps, with basket, size 10 x 110

**Struempel-Voss Nasal Forceps**

- **Nasal forceps, acc. to Struempel-Voss**
  - extra delicate, 45° upcurved, 10 cm working length, 2.5 mm jaws size

- WT330300 Struempel-Voss nasal forceps, curved up, delicate, size 110

**Struempel Forceps**

- **Nasal forceps, acc. to Struempel**
  - oval cup-shaped jaws, 10 cm working length, 2.6 mm width

- WT341000 Nasal forceps, acc. to Struempel, straight, size 2.6 x 100
- WT341045 Nasal forceps, acc. to Struempel, curved up 45, size 2.6 x 100
- WT341090 Nasal forceps, acc. to Struempel, curved up 90, size 2.6 x 100
**Struycken Nasal Cutting Forceps**

**Punch forceps, acc. to Struycken**
11 cm working length, cutting width (mm)

WT327500 Punch forceps, acc. to Struycken, size 1.2 x 110

---

**Takahashi Nasal Forceps**

**Nasal forceps, acc. to Takahashi**
spoon 3 x 10 mm, 5 x 10 mm (large), various working lengths (mm)

WT327001 Nasal forceps, acc. to Takahashi, small, straight, size 3 x 100
WT327002 Nasal forceps, acc. to Takahashi, curved up, straight, size 3 x 100
WT327003 Nasal forceps, acc. to Takahashi, large, straight, size 115

---

**Wigand Polyp Grasping Forceps**

**Grasping forceps, acc. to Wigand**
round shaped, spoon 6 x 14 mm, 11 cm working length, 60° upcurved

WT330400 Grasping forceps, acc. to Wigand, for polys, round, curved up, size 110

---

**Draf Ethmoid Forceps**

**Nasal forceps, acc. to Draf**
very delicate, 2.4 mm width, various working lengths (mm), straight

WT338413 Nasal forceps, acc. to Draf, size 2.4 x 130
WT338416 Nasal forceps, acc. to Draf, size 2.4 x 160
WT338419 Nasal forceps, acc. to Draf, size 2.4 x 190

**Nasal forceps, acc. to Draf**
very delicate, 2.4 mm width, various working lengths (mm), 60° upcurved

WT338513 Nasal forceps, acc. to Draf, curved up, size 2.4 x 130
WT338516 Nasal forceps, acc. to Draf, curved up, size 2.4 x 160
WT338519 Nasal forceps, acc. to Draf, curved up, size 2.4 x 190

**Nasal forceps, acc. to Draf**
very delicate, 2.4 mm width, various working lengths (mm), 90° upcurved

WT338613 Nasal forceps, acc. to Draf, curved up, size 2.4 x 130
WT338616 Nasal forceps, acc. to Draf, curved up, size 2.4 x 160
WT338619 Nasal forceps, acc. to Draf, curved up, size 2.4 x 190
Moriyama Forceps

Punch forceps, acc. to Moriyama
through-cutting, delicate, 12.5 cm working length, various cup types and sizes (mm)

WT326801 Punch forceps, acc. to Moriyama, through cutting, delicate, straight, size 1.5 x 125

WT326802 Punch forceps, acc. to Moriyama, through cutting, delicate, curved up, size 1.5 x 125

WT326803 Punch forceps, acc. to Moriyama, through cutting, delicate, sheath curved, size 1.5 x 125

Nasal forceps, acc. to Moriyama
with oval cups, 14 cm working length, various cup types and sizes (mm)

WT326804 Nasal forceps, acc. to Moriyama, with oval cups, straight, size 3.0 x 140

WT326805 Nasal forceps, acc. to Moriyama, with oval cups, curved up, size 3.0 x 140

WT326806 Nasal forceps, acc. to Moriyama, with oval cups, fine, sheath curved up, size 140

Moriyama Forceps (2)

Forceps, acc. to Moriyama
various types, cutting widths (mm) working lengths (mm)

WT326807 Punch forceps, acc. to Moriyama, backward cutting, sheath curved up, size 2.7 x 130

WT326808 Punch forceps, acc. to Moriyama, through cutting, curved up, size 140

WT326809 Nasal forceps, acc. to Moriyama, with oval cups, curved up, size 140

WT326810 Punch forceps, acc. to Moriyama, through cutting, straight, size 105

WT326811 Punch forceps, acc. to Moriyama, through cutting, straight, size 3 x 105

WT326812 Punch forceps, acc. to Moriyama, through cutting, curved up, size 105

WT326813 Punch forceps, acc. to Moriyama, through cutting, curved up, size 2.0 x 100

WT326814 Punch forceps, acc. to Moriyama, through cutting, large, curved up, size 105

WT326815 Punch forceps, acc. to Moriyama, through cutting, straight, size 1.3 x 125

Procedure Guide: Endoscopic Surgery of the Osteomeatal Complex
**Wigand Through Cutting Forceps**

*Punch forceps, acc. to Wigand*
universal, 14 cm working length,
4.2 mm cutting width

- WT334200 Punch forceps,
  acc. to Wigand, universal,
  straight, size 4.2 x 140
- WT334245 Punch forceps,
  acc. to Wigand, universal,
  curved up 45, size 4.2 x 140

**Wigand “You see what you cut” Forceps**

*Punch forceps, acc. to Wigand-Herberhold*
13 cm working length/ 12.5 cm (WT334445)

- WT334300 Punch forceps,
  acc. to Wigand-Herberhold,
  forward cutting, straight, size L
- WT334345 Punch forceps,
  acc. to Wigand-Herberhold,
  forward cutting, curved up, size L
- WT334400 Punch forceps,
  acc. to Wigand-Herberhold,
  forward cutting, straight, size S
- WT334445 Punch forceps,
  acc. to Wigand-Herberhold,
  forward cutting, curved up, size S

**“Super Punch” Forceps**

*The serrated surface of the upper jaw prevents soft tissue or mucosa from slipping away.*

*Punch forceps “Super Punch”*
through-cutting, serrated upper jaw,
straight, 13 cm working length,
various cutting widths (mm)

- WT336400 Punch forceps “Super Punch”, through-cutting,
serrated, straight,
  size 2.0 x 130
- WT336401 Punch forceps “Super Punch”, through-cutting,
serrated, straight,
  size 2.5 x 130
- WT336402 Punch forceps “Super Punch”, through-cutting,
serrated, straight,
  size 3.0 x 130

*Punch forceps “Super Punch”*
through-cutting, serrated upper jaw,
upcurved, 13 cm working length,
various cutting widths (mm)

- WT336500 Punch forceps “Super Punch”, through-cutting,
serrated, curved,
  size 2.0 x 130
- WT336501 Punch forceps “Super Punch”, through-cutting,
serrated, curved,
  size 2.5 x 130
- WT336502 Punch forceps “Super Punch”, through-cutting,
serrated, curved,
  size 3.0 x 130
**Blakesley Through-Cutting Forceps**

**Punch forceps, acc. to Blakesley**
straight, working lengths shown in cm and mm (115=11.5 cm, 11=11cm), various cutting widths (mm)

- WT335800 Punch forceps, acc. to Blakesley, through-cutting, straight, size 2.0 x 110
- WT335801 Punch forceps, acc. to Blakesley, through-cutting, straight, size 2.5 x 100
- WT335802 Punch forceps, acc. to Blakesley, through-cutting, straight, size 3 x 11
- WT335900 Punch forceps, acc. to Blakesley, through-cutting, curved up, size 2 x 11
- WT335901 Punch forceps, acc. to Blakesley, through-cutting, curved up 45, size 2.5 x 115
- WT335902 Punch forceps, acc. to Blakesley, through-cutting, curved up, size 3 x 11

**Draf Punch Forceps**

**Punch forceps, acc. to Draf**
through-cutting, very delicate, oval jaws, 3 mm x 1 mm, 14 cm working length

- WT338901 Punch forceps, acc. to Draf, through-cutting, straight, size 1.0 x 140

**Punch Forceps**

**Punch forceps**
through-cutting, oval, shaft 70° upcurved, 13 cm working length, cutting width 2 x 6 mm

- WT336601 Punch forceps, through-cutting, curved up, cutting to the left, size 130
- WT336602 Punch forceps, through-cutting, curved up, cutting to the right, size 130

**Yoon Forceps**

**Nasal forceps, acc. to Yoon**
through-cutting, horizontal opening, cutting width 2.5 x 5 mm, oval, 13.5 cm working length

- WT336611 Nasal forceps, acc. to Yoon through-cutting, curved to left, size 2.5 x 135
- WT336612 Nasal forceps, acc. to Yoon through-cutting, curved to right, size 2.5 x 135
Weil-Blakesley Through-Cutting Forceps

Nasal forceps, acc. to Weil-Blakesley
straight, 11 cm working length

WT336726  Nasal forceps, acc. to Weil-Blakesley, through-cutting, straight, S, size 110
WT336728  Nasal forceps, acc. to Weil-Blakesley, through-cutting, straight, M, size 110
WT336730  Nasal forceps, acc. to Weil-Blakesley, through-cutting, straight, L, size 110

Nasal forceps, acc. to Weil-Blakesley
45° curved, 11 cm working length

WT336727  Nasal forceps, acc. to Weil-Blakesley, through-cutting, 45 curved, S, size 110
WT336729  Nasal forceps, acc. to Weil-Blakesley, through-cutting, 45 curved, M, size 110
WT336731  Nasal forceps, acc. to Weil-Blakesley, through-cutting, 45 curved, L, size 110
## Antrum Backbiters (1)

### Punch forceps
- **adult size:** 2.5 mm cutting width, 10 cm working length
- **WT335000** Punch forceps, backward upcutting, size 2.5 x 100
- **WT335001** Punch forceps, backward cutting, to the left, size 2.5 x 100
- **WT335002** Punch forceps, backward cutting, to the right, size 2.5 x 100

### Punch forceps
- **pediatric size:** 1.5 mm cutting width, 10 cm working length
- **WT335020** Punch forceps, backward upcutting, size 1.5 x 100
- **WT335021** Punch forceps, backward cutting, to the left, size 1.5 x 100
- **WT335022** Punch forceps, backward cutting, to the right, size 1.5 x 100

## Rotating Backbiters

The rotating system allows backward cutting to the left, the right and upwards.

### Punch forceps
- Finger post facilitates 360° rotation, 10 cm working length, various cutting widths (mm)
- **WT335015** Punch forceps, rotatable, backward cutting, curved up, size 1.5 x 100
- **WT335013** Punch forceps, rotatable, backward cutting, curved up, size 2.0 x 100
- **WT335025** Punch forceps, rotatable, backward cutting, curved up, size 2.5 x 100

### Punch forceps
- Finger post facilitates 360° rotation, shaft curved down, 10 cm working length, 2 mm cutting width
- **WT335050** Punch forceps, rotatable, backward cutting, size 2.0 x 100
### Pediatric Antrum Suction Backbiters

**Suction punch forceps**
- with integrated suction channel,
- 2 mm cutting width,
- 10 cm working length, 4 mm shaft diameter

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT334900</td>
<td>Suction punch forceps, backward cutting, straight, size 4.0 x 100</td>
</tr>
<tr>
<td>WT334904</td>
<td>Suction punch forceps, backward cutting, upcurved, size 4.0 x 100</td>
</tr>
</tbody>
</table>

### Antrum Suction Backbiters for Adults

**Suction punch forceps**
- with integrated suction channel,
- 2.5 mm cutting width,
- 10 cm working length, 5 mm shaft diameter

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT335100</td>
<td>Suction punch forceps, backward cutting, straight, size 5.0 x 100</td>
</tr>
<tr>
<td>WT335104</td>
<td>Suction punch forceps, backward cutting, curved up, size 5.0 x 100</td>
</tr>
</tbody>
</table>

### Sidebiting Antrum Punch

**Punch forceps**
- through-cutting,
- 13 cm working length, 3 mm cutting width

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT334801</td>
<td>Punch forceps, sideward cutting, downward left, size 3.0 x 130</td>
</tr>
<tr>
<td>WT334802</td>
<td>Punch forceps, sideward cutting, downward right, size 3.0 x 130</td>
</tr>
</tbody>
</table>

**Punch forceps, acc. to Schwager**
- (not shown)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT334803</td>
<td>Punch forceps, acc. to Schwager, curved left</td>
</tr>
<tr>
<td>WT334804</td>
<td>Punch forceps, acc. to Schwager, curved right</td>
</tr>
</tbody>
</table>
### Nasal Scissors

Nasal scissors
serrated blades, 13 cm working length, various types

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT326200</td>
<td>Nasal scissors, serrated, straight, size 130</td>
</tr>
<tr>
<td>WT326201</td>
<td>Nasal scissors, serrated, curved to left, size 130</td>
</tr>
<tr>
<td>WT326202</td>
<td>Nasal scissors, serrated, curved to right, size 130</td>
</tr>
</tbody>
</table>

### Heymann Nasal Scissors

Nasal scissors, acc. to Heymann
standard model, various working lengths (mm)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT326000</td>
<td>Nasal scissors, acc. to Heymann, standard, size 95</td>
</tr>
<tr>
<td>WT326100</td>
<td>Nasal scissors, acc. to Heymann, standard, size 90</td>
</tr>
<tr>
<td>WT326011</td>
<td>Nasal scissors, acc. to Heymann, standard, size 110</td>
</tr>
</tbody>
</table>

### Draf Ethmoid Scissors

Ethmoid scissors, acc. to Draf
very delicate, 5.8 mm blade length, various shaft lengths (mm)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT338713</td>
<td>Ethmoid scissors, acc. to Draf, straight, size 130</td>
</tr>
<tr>
<td>WT338716</td>
<td>Ethmoid scissors, acc. to Draf, straight, size 160</td>
</tr>
<tr>
<td>WT338719</td>
<td>Ethmoid scissors, acc. to Draf, straight, size 190</td>
</tr>
</tbody>
</table>

### Belucci Scissors

Nasal scissors, acc. to Belucci
straight, 7.7 mm jaws length, 10 cm shaft length

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT342000</td>
<td>Nasal scissors, acc. to Belucci, straight, size 100</td>
</tr>
</tbody>
</table>

### Fomon Scissors

Nasal scissors, acc. to Fomon
12 cm working length

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT438912</td>
<td>Nasal scissors, acc. to Fomon, curved up, size 120</td>
</tr>
</tbody>
</table>
## Circular Cutting Punches

| WT334735 | Punch forceps, circular cutting, straight, size 3.5 x 160 |
| WT334745 | Punch forceps, circular cutting, straight, size 4.5 x 160 |
| WT334765 | Punch forceps, circular cutting, curved up, size 3.5 x 160 |
| WT334775 | Punch forceps, circular cutting, curved up, size 4.5 x 160 |

Punch forceps, circular cutting cutting in a full circle of 360°, straight/65° upturned, 16 cm working length, various diameters (mm)

## Circular Cutting Punches (cont.)

| WT334935 | Punch forceps, circular cutting, straight, size 3.5 x 180 |
| WT334945 | Punch forceps, circular cutting, straight, size 4.5 x 180 |
| WT334965 | Punch forceps, circular cutting, curved up, size 3.5 x 170 |
| WT334975 | Punch forceps, circular cutting, curved up, size 4.5 x 170 |

Punch forceps, circular cutting cutting in a full circle of 360°, 65° upturned, 17 cm working length, various diameters (mm)

## Suction Punch

| WT334835 | Suction punch forceps, circular cutting, straight, size 3.5 x 160 |

Suction punch forceps integrated suction channel, allows cutting in a full circle of 360° with simultaneous suction, 3.5 mm diameter, 16 cm working length
Detachable Kerrison Sphenoid Punches

Punch forceps, acc. to Kerrison
detachable for reprocessing,
cutting up 90° or down 90°,
18 cm working length,
various cutting widths (mm)

WT512901 Punch forceps, acc. to Kerrison,
90 cutting upward, detachable, size 1.0 x 180
WT512902 Punch forceps, acc. to Kerrison,
90 cutting upward, detachable, size 2.0 x 180
WT512903 Punch forceps, acc. to Kerrison,
90 cutting upward, detachable, size 3.0 x 180
WT512904 Punch forceps, acc. to Kerrison,
90 cutting upward, detachable, size 4.0 x 180
WT512911 Punch forceps, acc. to Kerrison,
90 cutting downward, detachable, size 1.0 x 180
WT512912 Punch forceps, acc. to Kerrison,
90 cutting downward, detachable, size 2.0 x 180
WT512913 Punch forceps, acc. to Kerrison,
90 cutting downward, detachable, size 3.0 x 180
WT512914 Punch forceps, acc. to Kerrison,
90 cutting downward, detachable, size 4.0 x 180

Punch forceps, acc. to Kerrison
detachable for reprocessing,
cutting up 40°,
18 cm working length,
2.0 mm cutting width

WT512921 Punch forceps, acc. to Kerrison,
40 cutting upward, detachable, size 1.0 x 180
WT512922 Punch forceps, acc. to Kerrison
40 cutting upward, detachable, size 2.0 x 180
WT512923 Punch forceps, acc. to Kerrison
40 cutting upward, detachable, size 3.0 x 180
WT512924 Punch forceps, acc. to Kerrison,
40 cutting upward, detachable, size 4.0 x 180
WT512925 Punch forceps, acc. to Kerrison,
40 cutting upward, detachable, size 5.0 x 180
WT512926 Punch forceps, acc. to Kerrison,
40 cutting upward, detachable, size 6.0 x 180

Kerrison Sphenoid Punches

Punch forceps, acc. to Kerrison
cutting up 90° or down 90°,
18 cm working length,
various cutting widths (mm)

WT513201 Punch forceps, acc. to Kerrison, 90 cutting upward,
size 1.0 x 180
WT513202 Punch forceps, acc. to Kerrison, 90 cutting upward,
size 2.0 x 180
WT513203 Punch forceps, acc. to Kerrison, 90 cutting upward,
size 3.0 x 180
WT513302 Punch forceps, acc. to Kerrison, 90 cutting downward,
size 2.0 x 180
WT513303 Punch forceps, acc. to Kerrison, 90 cutting downward,
size 3.0 x 180

Punch forceps, acc. to Kerrison
cutting up 40°,
18 cm working length,
2.0 mm cutting width

WT513402 Punch forceps, acc. to Kerrison,
40 cutting upward, size 2.0 x 180
Frontal Sinus Punch

**Punch forceps**
- shaft 70° upturned,
- 2.0 or 3.5 mm jaws size,
- 18 or 17.5 cm working length

WT512602  Punch forceps, curved up, size 2.0 x 180
WT512603  Punch forceps, curved up 70, size 3.5 x 175

Hajek Sphenoid Punches

**Punch forceps, acc. to Hajek**
- 4 mm width,
- various working lengths (mm), various types

WT512001  Punch forceps, acc. to Hajek, cutting upward 90, size 4.0 x 120
WT512002  Punch forceps, acc. to Hajek, cutting upward 90, size 4.0 x 140
WT512201  Punch forceps, acc. to Hajek, upcutting backward 90, size 4.0 x 140
WT512202  Punch forceps, acc. to Hajek, downcutting backward 90, size 4.0 x 140

Hajek-Kofler Sphenoid Punches

**Punch forceps, acc. to Hajek-Kofler**
- forward cutting, up 45°,
- 14 cm working length, various cutting widths (mm)

WT512301  Punch forceps, acc. to Hajek-Kofler, upcutting forward, size 4.0 x 140
WT512302  Punch forceps, acc. to Hajek-Kofler, upcutting forward, size 2.0 x 140

**Punch forceps, acc. to Hajek-Kofler**
- slender, 360° rotatable,
- 15.5 cm working length

WT513000  Punch forceps, acc. to Hajek-Kofler, rotatable, size 155
Sphenoid Punches

- With deposit to pick up and collect bone material.
- Enables to work continuously.

**Punch forceps**

with guide wire, through-cutting,
15 cm working length, various cutting widths (mm)

WT512402 Punch forceps, through-cutting,
upward 90, size 2.0 x 150

WT512403 Punch forceps, through-cutting,
size 3.0 x 150

WT512410 Guide wire, for punch forceps

McKenty Sphenoid Punches

**Punch forceps, acc. to McKenty**
through-cutting, slender,
rotatable 360°, 2 mm cutting width,
14.5 cm working length

WT513100 Punch forceps, acc. to McKenty, rotatable,
through-cutting, size 2.0 x 14.5
**Hartmann Nasal Specula**

**Nasal Speculum, acc. to Hartmann**
13.5 cm total length for adults,
13.0 cm total lengths for children,
various diameters (mm)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT143001</td>
<td>Nasal Speculum, acc. to Hartmann, for adults, size 33.5 x 135</td>
</tr>
<tr>
<td>WT143002</td>
<td>Nasal Speculum, acc. to Hartmann, for children, size 27 x 130</td>
</tr>
</tbody>
</table>

**Killian-Struycken Nasal Specula**

**Nasal speculum, acc. to Killian-Struycken**
adaption to articulated arm 218800,
serrated, shortened blade, with set screw,
15 cm total length, various blade sizes (mm)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT497601</td>
<td>Nasal speculum, acc. to Killian-Struycken, for articulated arm, left blade, size 55, 150</td>
</tr>
<tr>
<td>WT497602</td>
<td>Nasal speculum, acc. to Killian-Struycken, for articulated arm, right blade, size 55, 150</td>
</tr>
<tr>
<td>WT497603</td>
<td>Nasal speculum, acc. to Killian-Struycken, for articulated arm, left blade, size 65, 150</td>
</tr>
<tr>
<td>WT497604</td>
<td>Nasal speculum, acc. to Killian-Struycken, for articulated arm, right blade, size 65, 150</td>
</tr>
<tr>
<td>WT497605</td>
<td>Nasal speculum, acc. to Killian-Struycken, for articulated arm, left blade, size 75, 150</td>
</tr>
<tr>
<td>WT497606</td>
<td>Nasal speculum, acc. to Killian-Struycken, for articulated arm, right blade, size 75, 150</td>
</tr>
</tbody>
</table>

**Sinus Specula**

**Nasal speculum**
adaption to articulated arm 218800,
blades without teeth, with set screw,
15 cm total length, various blade sizes (mm)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT497801</td>
<td>Nasal speculum, for articulated arm, without teeth, left blade, size 55, 35 x 150</td>
</tr>
<tr>
<td>WT497802</td>
<td>Nasal speculum, for articulated arm, without teeth, right blade, size 55, 35 x 150</td>
</tr>
<tr>
<td>WT497803</td>
<td>Nasal speculum, for articulated arm, without teeth, left blade, size 75, 35 x 150</td>
</tr>
<tr>
<td>WT497804</td>
<td>Nasal speculum, for articulated arm, without teeth, right blade, size 75, 35 x 150</td>
</tr>
<tr>
<td>WT497805</td>
<td>Nasal speculum, for articulated arm, without teeth, left blade, size 75, 52 x 150</td>
</tr>
<tr>
<td>WT497806</td>
<td>Nasal speculum, for articulated arm, without teeth, right blade, size 75, 52 x 150</td>
</tr>
</tbody>
</table>

**Nasal speculum "Würzburg"**
adaption to articulated arm 218800,
serrated, shortened blade,
13 cm total length, various blade sizes (mm)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT498001</td>
<td>Nasal speculum &quot;Würzburg&quot;, for articulated arm, left blade, size 25, 18 x 130</td>
</tr>
<tr>
<td>WT498002</td>
<td>Nasal speculum &quot;Würzburg&quot;, for articulated arm, right blade, size 25, 18 x 130</td>
</tr>
</tbody>
</table>

**Nasal speculum, with light carrier**
13.5 cm total length, various blade sizes (mm)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT497740</td>
<td>Nasal speculum, with light carrier, size 40 x 135</td>
</tr>
<tr>
<td>WT497755</td>
<td>Nasal speculum, with light carrier, size 55 x 135</td>
</tr>
<tr>
<td>WT497775</td>
<td>Nasal speculum, with light carrier, size 75 x 135</td>
</tr>
<tr>
<td>WT497790</td>
<td>Nasal speculum, with light carrier, size 90 x 135</td>
</tr>
</tbody>
</table>
**Flexible Tension Arm**

**Articulated arm**
complete with holding rod
for attachment to operating table

WT218800  Articulated arm, flexible, with holding rod

**Clamp socket**
attachable to operating table

WT218801  Clamp socket, for articulated arm WT218800

---

**Instruments for Flexible Tension Arm**

**Adapter**
for attachment to sinuscope

WT218803  Adapter, endoscope to articulated arm WT218800, size 80

**Adapter**
for articulated arm WT218800,
for Cottle nasal specula with set screw

WT218804  Adapter, nasal speculum to articulated arm WT218800

**Adapter**
for articulated arm WT218800,
size 120

WT218802  Adapter, ear speculum to articulated arm WT218800, size 120

---

60 Procedure Guide: Endoscopic Surgery of the Osteomeatal Complex
### Curette

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>70230757</td>
<td>Antrum curette, 45° angled, 1 pc.</td>
</tr>
</tbody>
</table>

### Elevator

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>270202</td>
<td>Dunning elevator-curette, double-ended, 185 mm (7.3&quot;) overall length, ebony finish</td>
</tr>
</tbody>
</table>

### Needle

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>230666</td>
<td>Septal needle (not shown), with Luer-lock</td>
</tr>
</tbody>
</table>