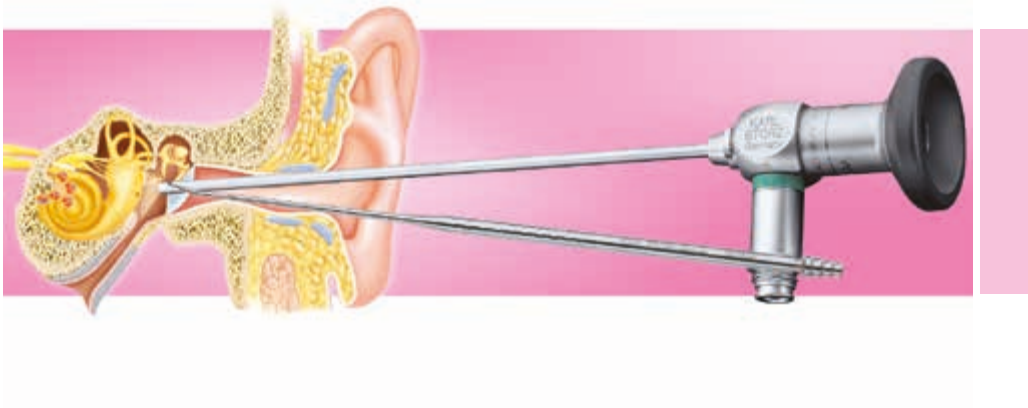


Instrument Set for Endoscopic Middle Ear Surgery



Endoscopic Middle Ear Surgery

There has been an increasing trend worldwide towards the use of the endoscope in middle ear surgery thanks to new advancements in instruments and enhanced visualization technologies. All ENT specialists who use the endoscope for middle ear surgery realize how the predominant use of the microscope up to now and its limitations have influenced clinical perception, e.g. when removing a cholesteatoma.

Enhanced visualization technologies in combination with the outstanding optical properties of the endoscope as well as special instruments offer new perspectives and possibilities in middle ear surgery. These developments have led to a change of thinking in sinus surgery and, consequently, to new insights and findings in endoscopic middle ear surgery.

The patient stands to benefit most from endoscopic middle ear surgery. One main advantage is the faster recovery of the patient due to a minimally invasive procedure. Furthermore, it is confirmed that a reduced risk of recurrence occurs if the endoscope is used in cholesteatoma surgery. Moreover, using an endoscope considerably reduces in-situ tumor residue thanks to the enhanced view of the entire surgical site.

The benefits of endoscopic middle ear surgery are based on the key features of the transcanal endoscopic approach:

- Access to previously inaccessible anatomical regions of the middle ear
- Bypassing the postauricular approach which is associated with surgical complications within the tympanic cavity and its hard-to-reach extensions
- Complete examination of the middle ear with a better control over pathology
- Minimally invasive approach
- Enables meaningful photo and video documentation

The key aspect of endoscopic middle ear surgery is the rediscovery of the ear canal as the most logical, direct and natural approach to the middle ear. This provides a new insight into the pathologies found there and changes the surgical treatment paradigm. The wide view provided by the endoscope allows a minimally invasive approach through the ear canal to the tympanic cavity and an all-encompassing view of the structures to be targeted in middle ear surgery. It facilitates the complete extirpation of diseased tissue structures without the need for a postauricular approach. The endoscope can also be used in a variety of other middle ear pathologies.

Advantages of the endoscope compared to the microscope:

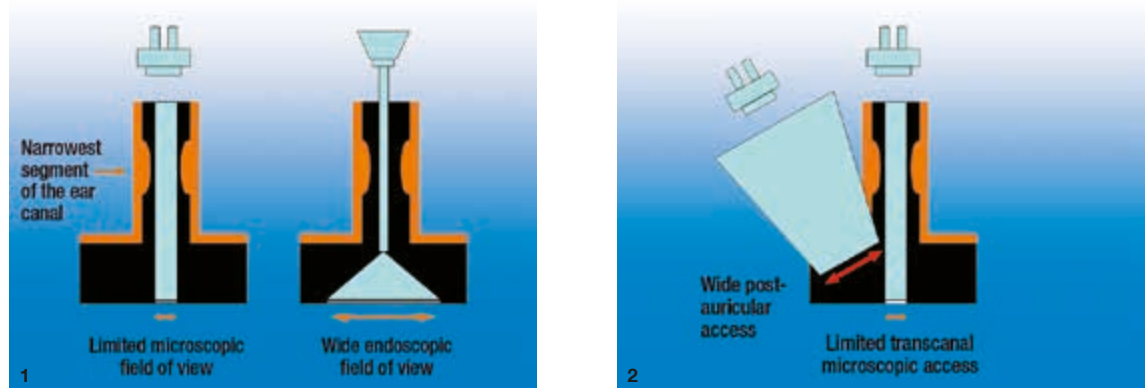


Fig. 1: The view through the microscope during transcanal surgery is firmly defined and limited by the narrowest segment of the ear canal. In contrast, the endoscope bypasses this narrow segment and provides a very wide view that allows the surgeon to “look around corners”, even if a 0° telescope is used.

Fig. 2: The limited view provided by the microscope during transcanal procedures has forced surgeons to perform postauricular mastoidectomy during surgery. Here a port parallel to the epitympanum is created after a considerable amount of healthy bone has been removed.

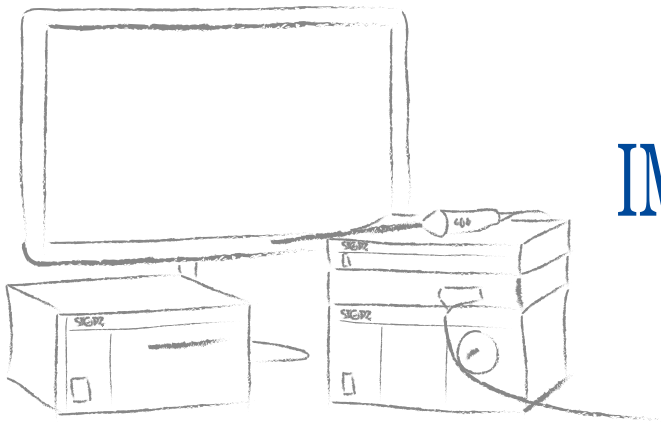


IMAGE1 S 3D

The main drivers in the development of endoscopic ear surgery are the considerably improved image technologies. The benefits of these image technologies such as, for example, KARL STORZ IMAGE1 high-definition resolution and the new 4U (4K) platform combined with the physical and optical advantages of the endoscope create new possibilities of visualization. Higher resolution and contrast allows the surgeon to better identify anatomical structures and to recognize pathological processes in a quality never seen before.



Visualization of the middle ear with the help of an endoscope with a view of the tympanum and the handle of malleus



Endoscopic view of the middle ear with a view of the incudostapedial joint and the round window



Instrumentation

The following instrument set has been specially designed in order to fulfill the requirements of endoscopic ear surgery. The modified instruments allow a better control over the pathology and facilitate access to previously unreachable or difficult to reach anatomical recesses like the sinus tympani, the facial recess and the anterior epitympanic recess.



227201

Ear Hook, curved to right,
working length 5.5 cm, total length 16 cm



227202

Ear Hook, curved to left,
working length 5.5 cm, total length 16 cm



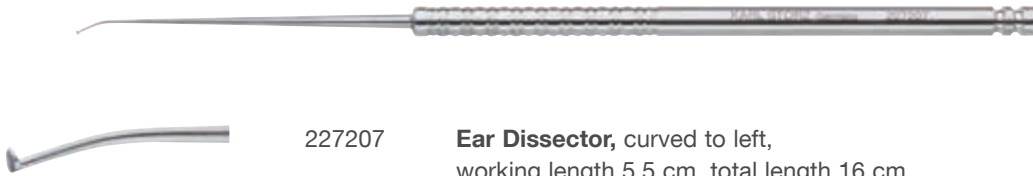
227203

Ear Hook, curved backwards,
working length 5.5 cm, total length 16 cm



227206

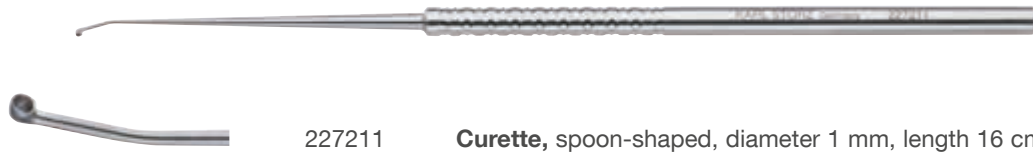
Ear Dissector, curved to right,
working length 5.5 cm, total length 16 cm



227207 **Ear Dissector**, curved to left,
working length 5.5 cm, total length 16 cm



227208 **Ear Dissector**, curved backwards,
working length 5.5 cm, total length 16 cm



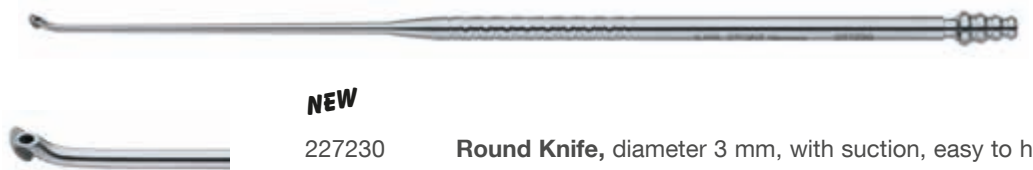
227211 **Curette**, spoon-shaped, diameter 1 mm, length 16 cm



224003 HOUSE **Double Curette**, medium, spoon sizes 1 x 1.8 mm
and 2 x 2.8 mm, length 15 cm



NEW
224004 HOUSE **Double Curette**, medium, spoon sizes 1 x 1.6 mm
and 2 x 3.5 mm, length 18 cm



NEW
227230 **Round Knife**, diameter 3 mm, with suction, easy to handle
due to rotating tube olive, length 19 cm

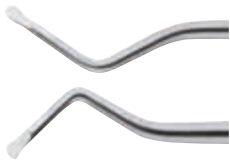
*Cutting edge close
to the suction hole*

The double-ended, strongly curved dissectors are very helpful in removing tissue out of very deep and difficult to reach areas in the middle ear.



226211

THOMASSIN **Dissector**, double-ended, distal tips with single curve to right or to left, length 18 cm



226212

THOMASSIN **Dissector**, double-ended, distal tips with double curve to right or to left, length 18 cm



NEW

226213

THOMASSIN **Dissector**, double-ended, distal tips angled 90° to right or left, length 18 cm



227213

Curette, double-ended, spoon-shaped tips diameter 1 mm and 1.5 mm, end position angled 90° to sheath, length 17 cm

The main difference of this new range of micro cupped forceps is the working length: When working transcanally, the additional 2 centimeters in length provide a more comfortable manipulation of the instruments.



227251

Ear Forceps, 45° curved right, extra delicate, oval cupped jaws, 0.6 mm, working length 10 cm



227252

Ear Forceps, 45° curved left, extra delicate, oval cupped jaws, 0.6 mm, working length 10 cm



227253

Ear Forceps, 45° curved upwards, extra delicate, oval cupped jaws, 0.6 mm, working length 10 cm

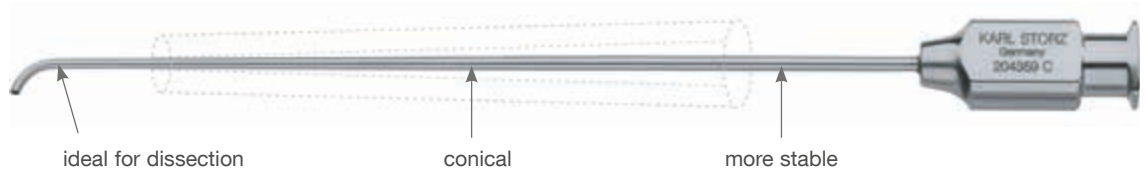


227255

Ear Forceps, curved downward and backward, extra delicate, oval cupped jaws, 0.9 mm, working length 10 cm



The New Conical Suction Tubes from KARL STORZ



204359 C **Suction Tube**, curved 3 mm, LUER-Lock, outer diameter 1 mm, length 8 cm, conical



204361 C **Suction Tube**, curved 6 mm, LUER-Lock, outer diameter 1 mm, length 8 cm, conical



204362 C **Suction Tube**, curved 6 mm, LUER-Lock, outer diameter 1.2 mm, length 8 cm, conical



204365 C **Suction Tube**, curved 8 mm, LUER-Lock, outer diameter 1.2 mm, length 8 cm, conical



204366 C **Suction Tube**, curved 8 mm, LUER-Lock, outer diameter 1.6 mm, length 8 cm, conical



204367 C **Suction Tube**, curved 6 mm, LUER-Lock, outer diameter 1.6 mm, length 8 cm, conical



204362 C

600019

204200



600019 **LUER Cone Connector**, male, rotating



204200 **FISCH Suction Handle**, with cut-off hole, LUER cone, length 5.5 cm, for use with Suction Tubes 204005 – 204025, 204305 – 204330

As a supplement to the instrument set, the following instruments can be used for endoscopic middle ear surgery:



222605 L **BELLUCCI Scissors**, delicate, curved to left, working length 8 cm



222604 R **Same**, curved to right





221100

HARTMANN Ear Forceps,
extra delicate, serrated,
1 x 4.5 mm, working length 8 cm



224303

WULLSTEIN Needle,
slight curve, length 16.5 cm



226810

Round Knife 45°, diameter 1 mm,
length 16 cm



226815

Same, diameter 1.5 mm

226820

Same, diameter 2 mm

226823

Same, diameter 2.3 mm

226825

Same, diameter 2.5 mm

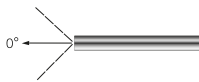
226830

Same, diameter 3 mm

226835

Same, diameter 3.5 mm

Endoscopic ear surgery necessitates several different angled endoscopes in order to visualize the entire operating field. The 0° and 45° telescopes are used in particular. KARL STORZ specially developed the following endoscopes to this end. As they are only 3 mm in diameter and have a length of 14 cm they are ideal for this purpose.



7220 AA

HOPKINS® Straight Forward Telescope 0°, enlarged view, diameter 3 mm, length 14 cm, **autoclavable**, fiber optic light transmission incorporated, color code: green



7220 FA

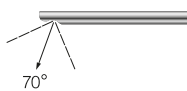
HOPKINS® Forward-Oblique Telescope 45°, enlarged view, diameter 3 mm, length 14 cm, **autoclavable**, fiber optic light transmission incorporated, color code: black

Further available telescopes



7220 BA

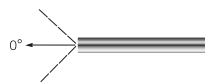
HOPKINS® Forward-Oblique Telescope 30°, enlarged view, diameter 3 mm, length 14 cm, **autoclavable**, fiber optic light transmission incorporated, color code: red



7220 CA

HOPKINS® Lateral Telescope 70°, enlarged view, diameter 3 mm, length 14 cm, **autoclavable**, fiber optic light transmission incorporated, color code: yellow

Telescopes from the 7229 series that are 2.7 mm in diameter and with a length of 18 cm are also ideally suited for use in middle ear surgery.



7229 AA

HOPKINS® Straight Forward Telescope 0°, enlarged view, diameter 2.7 mm, length 18 cm, **autoclavable**, fiber optic light transmission incorporated, color code: green



7229 FA

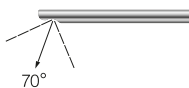
HOPKINS® Forward-Oblique Telescope 45°, enlarged view, diameter 2.7 mm, length 18 cm, **autoclavable**, fiber optic light transmission incorporated, color code: black

Further available telescopes



7229 BA

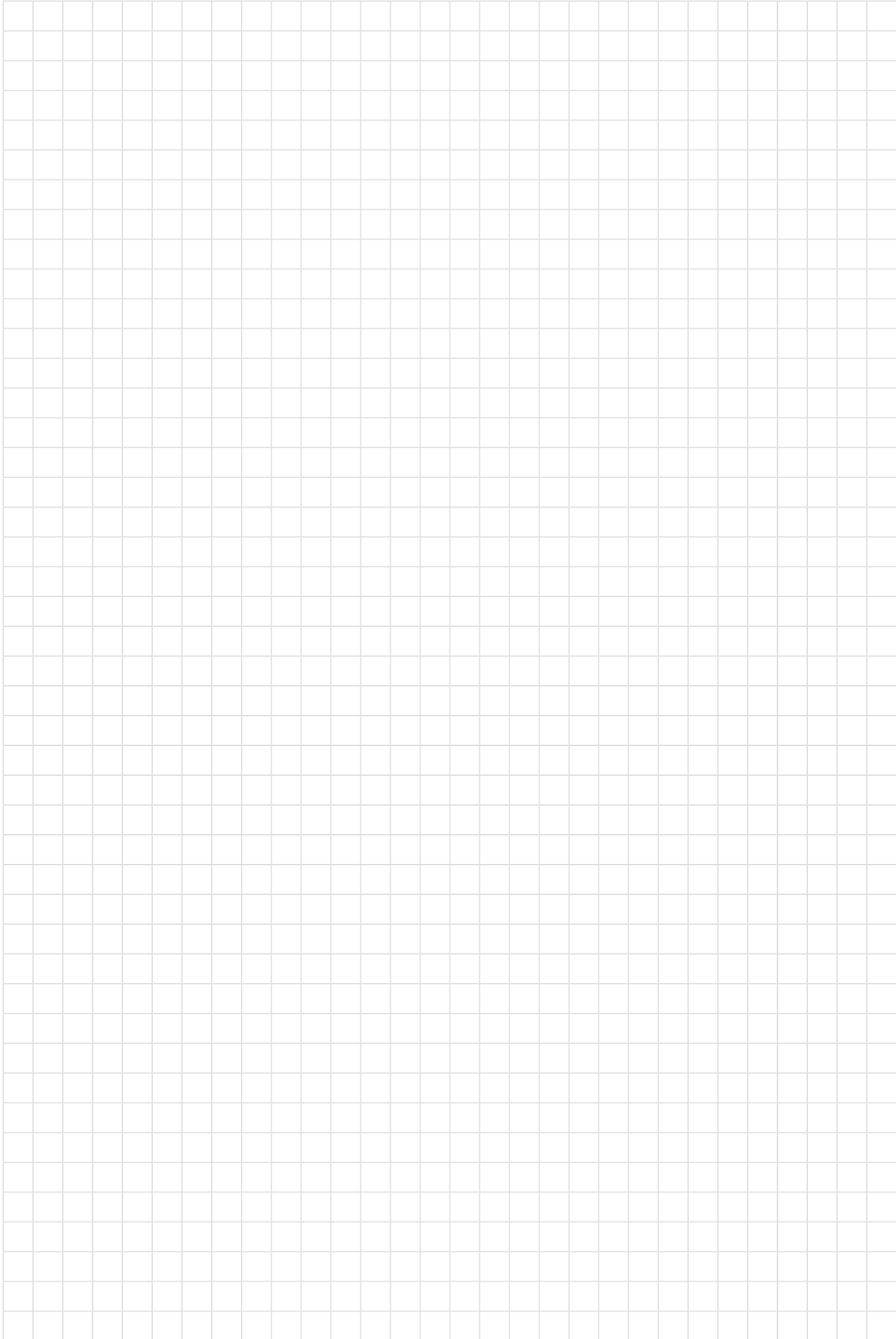
HOPKINS® Forward-Oblique Telescope 30°, enlarged view, diameter 2.7 mm, length 18 cm, **autoclavable**, fiber optic light transmission incorporated, color code: red



7229 CA

HOPKINS® Lateral Telescope 70°, enlarged view, diameter 2.7 mm, length 18 cm, **autoclavable**, fiber optic light transmission incorporated, color code: yellow

Notes





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