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. Endoscopic ear surgery enables:

• Access to previously inaccessible anatomical regions of the middle ear
• Bypassing the postauricular approach
• Complete examination of the middle ear with the help of angled telescopes
• Minimally invasive approach
• Photo and video documentation
The key aspect of endoscopic middle ear surgery is the rediscovery of the ear canal as a natural and direct approach to the middle ear. The wide view provided by the endoscope allows 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 to treat a variety of 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.
Significant improvements in camera technologies have also played a role in the development of endoscopic middle ear surgery. The KARL STORZ 4U camera platform with a 4k resolution is suitable for this purpose.

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 was specially designed for use in endoscopic middle ear surgery.

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

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

227230  **Round Knife**, diameter 3 mm, with suction, easy to handle due to rotating tube olive, length 19 cm
The double-ended, strongly curved dissectors can be 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

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

- **204362 C**

  - 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

- **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 middle ear surgery necessitates several different angled endoscopes in order to visualize the entire operating field.

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

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

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

**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 suitable for use in endoscopic 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
It is recommended to check the suitability of the product for the intended procedure prior to use.