Management of Lumbar Spine Pathologies

The surgical spectrum for minimally invasive interventions in spine surgery has undergone a transformation. Due to demographic developments and a population that is also increasingly active at an advanced age, today’s spine surgeon encounters more patients with massive or at least considerably advanced spinal degeneration. This places special demands on minimally invasive endoscopic or exoscopic surgical systems.

At the same time, there is an increased demand and need for minimally invasive endoscopic procedures in the field of spine surgery.

KARL STORZ offers a wide range of different systems providing endoscopic and exoscopic visualization.

Furthermore, KARL STORZ offers a solution from a single source that is tailored to the needs of spine surgery with regard to surgical approach, imaging and OR integration.
Indications: Management of Lumbar Spine Pathologies

**Visualization**
- **4K HD**
  - Tubular Endoscopy
  - EASYGO® II, 25° endoscopes with 90° angled eyepieces (3 lengths)
- **4K HD**
  - Percutaneous Endoscopy
  - Endoscopes optimized for various approaches (transforaminal, interlaminar, posterolateral)
- **3D**
  - Exoscopy
  - Extracorporeal 3D visualization
  - VITOM® 3D

**Access**
- **Tubular**
  - Sequential Dilation
- **Percutaneous**
  - Access Set
  - Puncture Needle
  - Guide Wire
  - Dilation Sleeves
  - Operating Sheaths
EasyGO!® II Generation – Tubular System for Endoscopic Spine Surgery

Special Features:

- A wide range of applications for treating degenerative spine diseases at the lumbar and cervical levels
- The second, completely reworked generation provides significantly more working space and application possibilities
- Specially adapted telescopes and the high-resolution KARL STORZ FULL HD technology enable clear and distinct differentiation of anatomic structures
- Sequential dilation and the use of smaller trocar sizes can reduce muscle trauma and skin incision length
- Specially developed malleable drill handpieces for use with all trocar lengths
Visualization

![Visualization Image]

28095 BAA  HOPKINS® Forward-Oblique Telescope 25°, eyepiece angled 90°, diameter 4 mm, length 6 cm, autoclavable, fiber optic light transmission incorporated, for use with 4 cm long EASYGO!® II Trocars 28163 OTA, 28163 OTB and 28163 OTC

28095 BAB  HOPKINS® Forward-Oblique Telescope 25°, eyepiece angled 90°, diameter 4 mm, length 9 cm, autoclavable, fiber optic light transmission incorporated, for use with 7 cm long EASYGO!® II Trocars 28163 OTM, 28163 OTK and 28163 OTG

28095 BAC  HOPKINS® Forward-Oblique Telescope 25°, eyepiece angled 90°, diameter 4 mm, length 11 cm, autoclavable, fiber optic light transmission incorporated, for use with 10 cm long EASYGO!® II Trocars 28163 OTW, 28163 OTY, 28163 OTZ

Access

Sequential Dilation

![Sequential Dilation Image]

28163 CNS  Dilation Sleeve, graduated, inner diameter 1.5 mm, outer diameter 5.2 mm, length 23 cm, color code: white

28163 COS  Dilation Sleeve, graduated, inner diameter 5.3 mm, outer diameter 8.9 mm, length 21 cm, color code: yellow

28163 CPS  Dilation Sleeve, graduated, inner diameter 9 mm, outer diameter 12.7 mm, length 19 cm, color code: orange

28163 CQS  Dilation Sleeve, graduated, inner diameter 12.9 mm, outer diameter 14.9 mm, length 17 cm, color code: red

28163 CRS  Dilation Sleeve, graduated, inner diameter 15.1 mm, outer diameter 16.9 mm, length 15 cm, color code: green

28163 CSS  Dilation Sleeve, graduated, inner diameter 17.1 mm, outer diameter 18.9 mm, length 14 cm, color code: blue

28163 CTS  Dilation Sleeve, graduated, inner diameter 19 mm, outer diameter 20.9 mm, length 13 cm, color code: black
### Trocars and Trocar Attachments

<table>
<thead>
<tr>
<th>Orange Trocar (diameter 15 mm)</th>
<th>Green Trocar (diameter 19 mm)</th>
<th>Black Trocar (diameter 23 mm)</th>
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<tbody>
<tr>
<td>28163 OAM Diameter 15 mm</td>
<td>28163 OBM</td>
<td>28163 OTA working length 40 mm</td>
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<tr>
<td>28163 OAK Diameter 19 mm</td>
<td>28163 OBK</td>
<td>28163 OTM working length 70 mm</td>
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<td>28163 OAG Diameter 23 mm</td>
<td>28163 OBG</td>
<td>28163 OTW working length 90 mm</td>
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<tr>
<td></td>
<td>X-Rays Holders</td>
<td>Trocars</td>
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<td></td>
<td>28163 OAM Diameter 15 mm</td>
<td>28163 OTA working length 40 mm</td>
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<td>28163 OAK Diameter 19 mm</td>
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<td>28163 OAG Diameter 23 mm</td>
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<td>28163 OTY working length 90 mm</td>
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<td></td>
<td>Endoscopes</td>
<td>28095 BAA diameter 4 mm length 6 cm</td>
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<tr>
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<td>X-Rays Holders</td>
<td>28095 BAB diameter 4 mm length 9 cm</td>
</tr>
<tr>
<td></td>
<td>X-Rays Holders</td>
<td>28095 BAC diameter 4 mm length 11 cm</td>
</tr>
</tbody>
</table>

### Dissection and Decompression

- **28163 CC** **Spoon Forceps**, dismantling, robust, oval, spoon size 3 x 10 mm, single action jaws, working length 20 cm
- **28163 EC** **Spoon Forceps**, dismantling, curved 30°, robust, oval, spoon size 3 x 10 mm, single action jaws, working length 20 cm
Management of Lumbar Spine Pathologies

28163 CFB  **KERRISON Bone Punch**, dismantling, 40° upbiting, not through-cutting, 4 mm, working length 24 cm

28163 CFS  **KERRISON Bone Punch**, dismantling, 40° upbiting, not through-cutting, 2 mm, working length 24 cm

28163 GRN  **Nerve Retractor**, angled 30°, distal width 5 mm, working length 17 cm

28163 EHK  **Hook Scissors**, single action jaws, diameter 2.5 mm, working length 25 cm

**Bleeding Management**

28163 BPL  **Bipolar Coagulation Forceps**, insulated, bayonet-shaped, tip 1.2 mm, length 23 cm, for use with Bipolar High Frequency Cords 847000 E or 847000 M/T/V/W

28163 GX  **Suction Tube**, with cut-off hole, Luer, diameter 2.5 mm, working length 15 cm

**Accessories**

28272 HB  **Articulated Stand**, reinforced version, L-shaped

28172 HR  **Rotation Socket**, to clamp to the operating table

The complete set configuration is available in the Neurosurgery catalog.
SpineTIP – System Optimized for Approaches to Percutaneous Endoscopic Lumbar Decompression

Special Features:

- One system – three sets optimized for standard approaches: **Transforaminal**, **interlaminar** and **posterolateral**
- Brilliant image quality ensures clear visibility during surgery
- Reusable bipolar electrodes for effective tissue and bone resection
- Ergonomic DRILLCUT-X® II Spine handpiece with matching single-use burrs for precise and powerful ablation of bone material during fully endoscopic percutaneous surgery
- Ergonomic and color-coded instruments for use in a safe and controlled manner
Visualization

28163 BTA  HOPKINS<sup>®</sup> Wide Angle Telescope 25°, angled eyepiece, outer diameter 6.6 mm, working channel 3.6 mm, length 25.7 cm, autoclavable, fiber optic light transmission incorporated, color code: blue

28163 BFA  HOPKINS<sup>®</sup> Wide Angle Telescope 25°, angled eyepiece, outer diameter 6.6 mm, working channel 3.6 mm, length 18 cm, autoclavable, fiber optic light transmission incorporated, color code: red

28163 FFA  HOPKINS<sup>®</sup> Wide Angle Telescope 15°, angled eyepiece, outer diameter 6.1 mm, working channel diameter 2.9 mm, length 18 cm, autoclavable, fiber optic light transmission incorporated, color code: green

Access

28163 PL  Puncture Needle, including stylet, diameter 1.8 mm, working length 18 cm, with 1.3 mm opening for guide wire

28163 GWT  Guide Wire, blunt on both sides, diameter 0.7 mm, working length 41 cm, package of 5

28163 CM  COTTLE Metal Mallet, with plastic replacement head, length 22.5 cm

28163 FEH  Punch Sleeve, for use with operating sheaths

28163 FHT  Dilation Sleeve, outer diameter 6.5 mm, inner diameter 1.4 mm, length 31 cm, color code: blue

28163 FHI  Dilation Sleeve, outer diameter 6.5 mm, inner diameter 1.4 mm, length 22 cm, color code: red

28163 FHP  Dilation Sleeve, outer diameter 6 mm, inner diameter 1 mm, length 22 cm, color code: green
Operating Sheath, graduated, with distal beak, integrated irrigation connector, inner diameter 6.8 mm, outer diameter 7.8 mm, length 25 cm, color code: blue

Operating Sheath, graduated, distal oblique, with clamp mechanism for fixation, integrated irrigation connector, inner diameter 7.2 mm, outer diameter 7.9 mm, length 18 cm, color code: red

Operating Sheath, graduated, distal straight, integrated irrigation connector, inner diameter 6.2 mm, outer diameter 6.9 mm, length 17 cm, color code: green

**Dissection and Decompression**

CLICKLINE Raven's Beak Forceps, rotating, dismantling, insulated, with LUER-Lock irrigation connector for cleaning, single action jaws, diameter 3.5 mm, length 36 cm, color code: blue, red

CLICKLINE Raven's Beak Forceps, rotating, single action jaws, size 2.7 mm, length 36 cm, color code: blue, red, green

CLICKLINE BLAKESLEY Grasping Forceps, rotating, dismantling, insulated, with LUER-Lock irrigation connector for cleaning, single action jaws, fenestrated, size 3 mm, length 36 cm, color code: blue, red

CLICKLINE BLAKESLEY Grasping Forceps, rotating, insulated, with LUER-Lock irrigation connector for cleaning, single action jaws, fenestrated, size 2.7 mm, length 30 cm, color code: blue, red, green

CLICKLINE Grasping Forceps, rotating, insulated, with LUER-Lock irrigation connector for cleaning, single action jaws, fenestrated, size 2.7 mm, length 30 cm, color code: blue, red, green

CLICKLINE Spoon Forceps, dismantling, oval, with LUER-Lock irrigation connector for cleaning, single action jaws, size 2.7 mm, length 30 cm, color code: blue, red, green

CLICKLINE Curette, bendable to 90°, with LUER-Lock irrigation connector for cleaning, size 3.5 mm, length 36 cm, color code: blue, red, green

CLICKLINE Curette, bendable to 90°, lateral cutting right, rotating, with LUER-Lock irrigation connector for cleaning, size 3.5 mm, length 36 cm, color code: blue, red

CLICKLINE Curette, bendable to 90°, lateral cutting left, rotating, with LUER-Lock irrigation connector for cleaning, size 3.5 mm, length 36 cm, color code: blue, red

Dissector, distally curved 45°, diameter 2.6 mm, working length 36 cm, color code: blue, red, green
Bleeding Management

28163 FBC  **Bipolar Electrode**, angled, diameter 2.5 mm, working length 36 cm, color code: **blue**, **red**, **green**

28762 KB  **Bipolar Coagulation Electrode**, diameter 1.7 mm, working length 30 cm

Accessories

**ARTHROPUMP® POWER**

283407 02-1  **ARTHROPUMP® POWER, Set**, spine, power supply 100-240 VAC, 50/60 Hz

- **SCB Connecting Cable**, length 100 cm,
- **Tubing Set Irrigation**, sterile, for single use, package of 3
- **Tubing Set Suction**, sterile, for single use, package of 3

**ENDOMAT® SELECT**

UP 210  **ENDOMAT® SELECT**, suction or irrigation pump, incl. mains cord, power supply 100-240 VAC, 50/60 Hz

UP 607  **SPINE Software**, license, allows selection of the procedures “Lumbar” and “Thoracic”, for use with **ENDOMAT® SELECT UP 210 Software and accessories**

031523-10*  **Tubing Set**, irrigation, pressure-controlled, sterile, for single use, package of 10, for use with **HAMOU® ENDOMAT® SCB 263311 20** and **ENDOMAT® SELECT UP 210**

* The complete set configuration is available in the Neurosurgery catalog.
The VITOM® 3D system provides many surgical disciplines with a revolutionary solution for the visualization of microsurgical and open surgical interventions. Application possibilities are similar to that of the operating microscope. The most important functions are controlled via the IMAGE1 PILOT, which is mounted on the OR table in the direct vicinity of the surgeon.

- Smaller, lighter and more compact than an operating microscope
- Lower acquisition costs and creates synergistic effects with endoscopy by using the same video tower – thus combining the benefits of endoscopy and microscopy
- Ergonomic work – the user is not confined to the eyepiece
- Improved workflow – the OR team can view the procedure in the same image quality as the surgeon
Overview

Note: VITOM® 3D can also be used for other fields of application such as, for example, NEUROSURGERY, ENT or HAND and PLASTIC SURGERY as well as conventional open surgery, e.g., CARDIOVASCULAR SURGERY.
UNIDRIVE® S III NEURO – Multifunctional High-Speed Motor System for all Indications in Neurosurgery and Spine Surgery

Special Features:

- The ergonomic DRILLCUT-X® II spine handpiece enables precise and powerful ablation of bone material during percutaneous full endoscopic surgery
- High-speed handpieces feature a quiet drilling performance, even at speeds up to 100,000 rpm
- Particularly long, malleable high-speed handpieces can be used for specific surgical techniques (e.g. tubular dilation systems)
- The motor control unit features intuitive touch screen control and supports handpiece changeover via automatic motor recognition
System Overview

Tubular and General Spine Surgery

- High-Speed Micro Motor
- High-Speed 100,000 rpm:
  - High-Speed Handpiece, medium, angled
- High-Speed Handpiece, long, angled
- High-Speed 60,000 rpm:
  - High-Speed Handpiece, long, angled
  - High-Speed Handpiece, extra long, malleable, slim, angled
  - High-Speed Handpiece, super long, malleable, slim, angled

Percutaneous Spinal Endoscopy

- DRILLCUT-X™ II SPINE Shaver Handpiece
- Suction Burr, sterile, for single use
- Diamond Burr, sterile, for single use
Recommended KARL STORZ Standard Set Configuration for Tubular and General Spine Surgery

40701701-1  **UNIDRIVE® S III NEURO SCB**, motor control unit with color display, touch screen, two motor outputs, integrated irrigation pump and integrated SCB module, power supply 100-240 VAC, 50/60 Hz

20712033  **High-Speed Micro Motor**, max. speed 60,000 rpm, including connecting cable, for use with UNIDRIVE® S III ENT/NEURO

252671  **High-Speed Handpiece**, extra long, malleable, slim, angled, 60,000 rpm

252672  **High-Speed Handpiece**, super long, malleable, slim, angled, 60,000 rpm

252663  **High-Speed Handpiece**, long, angled, 60,000 rpm

252681  **High-Speed Handpiece**, medium, angled, 100,000 rpm

252682  **High-Speed Handpiece**, long, angled, 100,000 rpm

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**High-Speed Diamond Burr**, 60,000 rpm, for single use, sterile, package of 5, for use with High-Speed Handpiece, 60,000 rpm

<table>
<thead>
<tr>
<th>Diameter</th>
<th>long</th>
<th>extra long</th>
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<tbody>
<tr>
<td>2 mm</td>
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<td>3 mm</td>
<td>330230 L</td>
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<tr>
<td>4 mm</td>
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Further information on handpieces and burrs is available in the Neurosurgery catalog.
Recommended KARL STORZ Standard Set Configuration for Percutaneous Spinal Endoscopy

**40701701-1** UNIDRIVE® S III NEURO SCB, motor control unit with color display, touch screen, two motor outputs, integrated irrigation pump and integrated SCB module, power supply 100-240 VAC, 50/60 Hz

28712050 DRILLCUT-X® II SPINE Handpiece, for use with UNIDRIVE® S III NEURO

- **41301 FD** Suction Burr, with integrated irrigation, straight, sterile, for single use, package of 5, cylindrical cutter head with lateral and distal protection, shaft diameter 3.5 mm, length 30 cm
- **41301 D** Diamond Burr, with integrated irrigation, straight, sterile, for single use, package of 5, diamond head, shaft diameter 3.5 mm, length 30 cm

Further information on handpieces and burrs is available in the Neurosurgery catalog.
Notes
Imaging and OR Integration

Storage and administration of image and video data

Flexible support for image sources

Centralized communication interface

KARL STORZ OR1™
Future-oriented integration meets innovative data management

KARL STORZ SE & Co. KG, Dr.-Karl-Storz-Straße 34, 78532 Tuttlingen/Germany
www.karlstorz.com
Further information and an overview of Spine Surgery products from KARL STORZ can be viewed on

www.karlstorz.com
in the Human Medicine section, Spine Surgery

Please note that the described products in this medium may not be available yet in all countries due to different regulatory requirements.

It is recommended to check the suitability of the product for the intended procedure prior to use.