Endoscopic Lumbar Discectomy and Other Thoracic and Lumbar Spinal Procedures with the SpineTIP System
SpineTIP – Endoscopic Lumbar and Thoracic System

Introduction

The SpineTIP System covers a broad operative spectrum for treating disc herniations in the lumbar and thoracic regions.

The system can be extended to the treatment of other spinal pathologies such as spondylodiscitis, psoas abscesses and spinal tumors.

Endoscopic systems that combine a high-resolution telescope, a light source as well as working and irrigation channels in one instrument make it possible to perform minimally invasive interventions via a single port under excellent visual control.

SpineTIP stands for 3 fundamental endoscopic approaches:

- Transforaminal
- Interlaminar
- Posterolateral

Access-specific telescopes and instruments were developed to optimize the range of applications, making it easy for the user to perform various techniques with the utmost quality while being geared towards specific pathologies. The posterolateral system is particularly suitable for treating pre-, intra- and extraforaminal herniated discs in the lumbar and thoracic regions (foraminoscope). At the same time, it allows a subtle exploration of the exiting nerve root in a particular segment without having to expand the working area.

The system can also be used for intradiscal procedures or endoscopically controlled rhizotomy at the facet joint, if required.

The new, longer transforaminal endoscope also enables successful operation on obese patients with central and mediolateral herniated discs without experiencing the typical problems associated with open procedures.

In contrast, the shorter system with a similar design is used for the interlaminar approach using special supplementary instruments, e.g., punches, particularly in the L5/S1 region. The use of manually or motor-driven burrs can widen the range of application. The “red system” is now often viewed as a bridge to spinal endoscopy.
SpineTIP – Endoscopic Lumbar Approaches

**Transforaminal Approach**

![Diagram of Transforaminal Approach]

- **Irrigation/suction channels**
- **Optical lens**
- **Light cable-connector**

**Interlaminar Approach**

![Diagram of Interlaminar Approach]

- **Irrigation/suction channels**
- **Optical lens**
- **Light cable-connector**

**Posterolateral Approach**

![Diagram of Posterolateral Approach]

- **Irrigation/suction channels**
- **Optical lens**
- **Light cable-connector**
- Specially developed for the treatment of medial and/or central disc herniation
- Angle of view 25° upwards: Allows optimal visualization of critical structures
- Telescope particularly suitable for adipose patients
- Outer diameter with sheath 7.8 mm
- Working channel for instruments with a diameter of 3.5 mm

- Particularly suitable for the treatment of mediolateral disc herniation on level L5 – S1 in cases where the iliac crest does not permit a lateral approach
- 25° angle of view upwards allows optimal visualization of the site
- Outer diameter with sheath 7.9 mm
- Working channel for instruments with a diameter of 3.5 mm

- Particularly suitable for the treatment of intra- and extra-foraminal disc herniation
- The 15° angle of view forwards allows visualization of the exiting nerve root
- Optimized, slender design (diameter 6.1 mm) adapted to oblique working angle in the foramen
- Outer diameter with sheath 6.9 mm
- Working channel for instruments with a diameter of 2.8 mm
Operating Sheaths

The operating sheaths are optimized for the various surgical approaches and the anatomical structures of the surgical site. The gradual and accurate positioning of the puncture needle, guide wire and dilation sleeve allows the operating sheath to be defined as an optimal approach. The corresponding color-coded endoscope is then inserted through this port.

28163 TSG  Operating Sheath, graduated, distal straight, integrated irrigation connector, inner diameter 6.8 mm, outer diameter 7.8 mm, length 25 cm, for use with HOPKINS® Telescope 25° 28163 BTA, color code: blue

28163 TSN  Operating Sheath, graduated, with distal beak, integrated irrigation connector, inner diameter 6.8 mm, outer diameter 7.8 mm, length 25 cm, for use with HOPKINS® Telescope 25° 28163 BTA, color code: blue

28163 TSW  Operating Sheath, graduated, distal oblique, integrated irrigation connector, inner diameter 6.8 mm, outer diameter 7.8 mm, length 25 cm, for use with HOPKINS® Telescope 25° 28163 BTA, color code: blue
28163 FSG Operating Sheath, graduated, distal straight, with clamp mechanism for fixation, integrated irrigation connector, inner diameter 7.2 mm, outer diameter 7.9 mm, length 17 cm, for use with HOPKINS® Telescope 25° 28163 BFA, color code: red

28163 FSN Operating Sheath, graduated, with distal beak, with clamp mechanism for fixation, integrated irrigation connector, inner diameter 7.2 mm, outer diameter 7.9 mm, length 18 cm, for use with HOPKINS® Telescope 25° 28163 BFA, color code: red

28163 FSW 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, for use with HOPKINS® Telescope 25° 28163 BFA, color code: red

28163 PSG Operating Sheath, graduated, distal straight, integrated irrigation connector, inner diameter 6.2 mm, outer diameter 6.9 mm, length 17 cm, for use with HOPKINS® Telescope 15° 28163 FFA, color code: green

28163 PSN Operating Sheath, graduated, distal beak, integrated irrigation connector, inner diameter 6.2 mm, outer diameter 6.9 mm, length 17 cm, for use with HOPKINS® Telescope 15° 28163 FFA, color code: green

28163 PSW Operating Sheath, graduated, distal oblique, integrated irrigation connector, inner diameter 6.2 mm, outer diameter 6.9 mm, length 17 cm, for use with HOPKINS® Telescope 15° 28163 FFA, color code: green
**Instruments**

A range of instruments available for the SpineTIP system is presented on the following pages. The specially developed instruments are based on the principle: Access-optimized - reusable - color-coded.

**Angled Bipolar Electrode**

The distally angled, reusable bipolar electrode with spring handle is used for point coagulation under endoscopic control.

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* Bipolar Electrode Insert 28163 FBE is available by separate order.
* The corresponding bipolar cable is available for order, depending on the HF surgical unit used.
Angled Palpation Hooks
The available palpation hooks with 90° angulation allow palpation and mobilization of the intervertebral disc material and thus enable targeted decompression.

28163 FBH CLICKLINE Palpation Hook, rotating, dismantling, not insulated, with LUER-Lock irrigation connector for cleaning, with distal ball, bendable to 90°, size 3.5 mm, length 36 cm including:
- Metal Handle, without ratchet, with plastic rings with larger contact area
- Outer Sheath, with working insert
  color code: blue, red

28163 FBG CLICKLINE Palpation Hook, rotating, dismantling, not insulated, with LUER-Lock irrigation connector for cleaning, with distal ball, bendable to 90°, diameter 2.7 mm, length 36 cm including:
- Metal Handle, without ratchet, with plastic rings with larger contact area
- Outer Sheath, with Palpation Hook Working Insert
  color code: blue, red

Grasping Forceps
The grasping forceps listed here are specially designed for the SpineTIP system and allow the targeted removal of tissue fragments. Furthermore, the unique raven’s beak forceps is a special instrument that can be used to open the ligamentum flavum for the interlaminar approach.

28163 FZI 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 including:
- Plastic Handle, without ratchet
- Forceps Insert, with raven’s beak
  color code: blue, red
28163 FSI **CLICKLINE BLAKESLEY Grasping Forceps**, rotating, dismantling, insulated, with LUER-Lock irrigation connector for cleaning, single action jaws, fenestrated, size 3 mm, length 36 cm
including:
- Plastic Handle, without ratchet
- Outer Sheath, with forceps insert
color code: blue, red

28163 FZ **Grasping Forceps**, single action jaws, with 90° angle of view, diameter 3.5 mm, working length 36 cm
color code: blue, red

28163 FBM **Grasping Forceps**, double action jaws, diameter 2.7 mm, working length 36 cm
color code: blue, red, green

28163 SE **TAKE-APART® BLAKESLEY Grasping Forceps**, diameter 2.3 mm, length 30 cm
including:
- Handle
- Working Attachment
color code: red, green
28163 SG | TAKE-APART® Spoon Forceps, oval, diameter 2.3 mm, length 30 cm including:
- Handle
- Working Attachment
  color code: red, green

28163 SL | TAKE-APART® Grasping Forceps, serrated, diameter 2.3 mm, length 30 cm including:
- Handle
- Working Attachment
  color code: red, green

28163 FLB | CLICKLINE BLAKESLEY Grasping Forceps, dismantling, with Luer-Lock irrigation connector for cleaning, single action jaws, fenestrated, size 2.7 mm, length 30 cm including:
- Metal Handle, without ratchet, with 4 locking positions
- Outer Sheath, with forceps insert

28163 FLD | CLICKLINE Grasping Forceps, dismantling, with Luer-Lock irrigation connector for cleaning, single action jaws, serrated, size 2.7 mm, length 30 cm including:
- Metal Handle, without ratchet, with 4 locking positions
- Outer Sheath, with forceps insert
Lateral Punches
The following dismantling punches can be used for opening and removing firmer structures.

28163 FLF  **CLICKLINE Spoon Forceps**, dismantling, oval, with Luer-Lock irrigation connector for cleaning, size 2.7 mm, length 30 cm
including:
- **Metal Handle**, without ratchet,
- **Outer Sheath**, with forceps insert

28163 FPG  **SPINOFIT Punch**, dismantling, 90° downbiting, not through-cutting, working length 30 cm
including:
- **Punch Insert**
- **Outer Sheath**
- **Handle**
color code: red

28163 FPW  **SPINOFIT Punch**, dismantling, 45° downbiting, not through-cutting, working length 30 cm
including:
- **Punch Insert**
- **Outer Sheath**
- **Handle**
color code: red
Raven’s beak forceps and angled curettes
The new raven’s beak forceps was designed for opening the ligamentum flavum in the interlaminar approach to the spinal canal. The shortened beak makes it possible to open the instrument inside the operating sheath. This allows better grasping of the ligament. This forceps features the proven CLICKLINE design.

CLICKLINE Raven’s Beak Forceps, rotating, single action jaws, size 2.7 mm, working length 36 cm including:
CLICKLINE Metal Handle, without ratchet, with larger contact area
Forceps Insert, with raven’s beak

Angled Curettes
New curettes for the GORE fully endoscopic set were developed in cooperation with our opinion leader Dr. Gore, Pune (India). Dr. Gore uses these curettes in lateral approaches for removing stenoses. Here the bone is directly ablated at the superior articular process. The curettes are available in different versions (offset downwards, to the right and left). These also feature the CLICKLINE design and are compatible with different CLICKLINE metal handles.

Curette spoon offset downwards

CLICKLINE Curette, bendable to 90°, rotating, with Luer-Lock irrigation connector for cleaning, size 3.5 mm, length 36 cm including:
Metal Handle, without ratchet, with larger contact area
Outer Sheath, with working insert
28163 FKB CLICKLINE Curette, bendable to 90°, non-rotating, with LUER-Lock irrigation connector for cleaning, size 3.5 mm, length 36 cm
including:
Metal Handle, without ratchet,
with larger contact area
Outer Sheath, with working insert

Curette spoon offset to the right

28163 FKC CLICKLINE Curette, bendable to 90°, lateral cutting right, rotating, with LUER-Lock irrigation connector for cleaning, size 3.5 mm, length 36 cm
including:
Metal Handle, without ratchet,
with larger contact area
Outer Sheath, with working insert

Curette spoon offset to the left

28163 FKF CLICKLINE Curette, bendable to 90°, lateral cutting left, with LUER-Lock irrigation connector for cleaning, size 3.5 mm, length 36 cm
including:
Metal Handle, without ratchet,
with larger contact area
Outer Sheath, with working insert
Dissectors and Palpation Hooks
In addition to the mobilization and identification of tissue differentiation, dissectors and palpation hooks are important instruments for application of the so-called foraminal retreat.

28163 FDW **Dissector**, distally curved 45°, diameter 2.6 mm, working length 36 cm
   color code: blue, red, green

28163 FDG **Dissector**, distally curved 90°, diameter 2.6 mm, working length 36 cm
   color code: blue, red, green

28163 UH **Palpation Hook**, distally angled 90°, with ball, diameter 2 mm, working length 25 cm
   color code: blue, red, green

Puncture Needles

28163 PLT **Puncture Needle**, including stylet, diameter 1.2 mm, working length 25 cm, with 0.8 mm opening for guide wire

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

28163 PEL **Puncture Needle**, including stylet, diameter 1.8 mm, working length 25 cm, with 1.3 mm opening for guide wire
Basic Set
Transformaminal Approach
1. **Puncture Needle**, including stylet, diameter 1.8 mm, working length 18 cm, with 1.3 mm opening for guide wire

2. **Guide Wire**, blunt, diameter 1.1 mm, working length 45 cm

3. **Dilation Sleeve**, outer diameter 6.5 mm, inner diameter 1.4 mm, length 31 cm, with two ports, for the transforaminal approach, color code: blue

4. **COTTLE Metal Mallet**, with plastic replacement head, length 22.5 cm

5. **Punch Sleeve**, for use with operating sheaths

6. **Fixation Handle**, for adjustment of dilation sleeves with outer diameter 2.5-6.5 mm

7. **Operating Sheath**, graduated, distal straight, integrated irrigation connector, inner diameter 6.8 mm, outer diameter 7.8 mm, length 25 cm, for use with HOPKINS® Telescope 25° 28163 BTA, color code: blue

8. **Operating Sheath**, graduated, with distal beak, integrated irrigation connector, inner diameter 6.8 mm, outer diameter 7.8 mm, length 25 cm, for use with HOPKINS® Telescope 25° 28163 BTA, color code: blue

9. **Operating Sheath**, graduated, distal oblique, integrated irrigation connector, inner diameter 6.8 mm, outer diameter 7.8 mm, length 25 cm, for use with HOPKINS® Telescope 25° 28163 BTA, color code: blue

10. **HOPKINS® 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

11. **Fiber Optic Light Cable**, with straight connector, diameter 3.5 mm, length 230 cm (not illustrated)

12. **Bipolar Electrode**, angled, diameter 2.5 mm, working length 36 cm

13. **Palpation Hook**, distally angled 45°, diameter 2 mm, working length 34 cm

14. **Dissector**, distally curved 45°, diameter 2.6 mm, working length 36 cm

15. **Dissector**, distally curved 90°, diameter 2.6 mm, working length 36 cm

16. **CLICKLINE Palpation Hook**, with distal ball, bendable to 90°, size 3.5 mm, length 36 cm

17. **Grasping Forceps**, single action jaws, with 90° angle of view, diameter 3.5 mm, working length 36 cm

18. **Grasping Forceps**, double action jaws, diameter 2.7 mm, working length 36 cm

19. **CLICKLINE Raven’s Beak Forceps**, rotating, single action jaws, diameter 3.5 mm, length 36 cm

20. **CLICKLINE BLAKESLEY Grasping Forceps**, rotating, single action jaws, fenestrated, size 3 mm, length 36 cm

21. **Knife**, retractable, diameter 3.5 mm, working length 36 cm

**Recommended Containers for Sterilization:**

Telescopes: 39314 G
Instruments: 39360 BK
Basic Set
Interlaminar Approach
1. **Puncture Needle**, including stylet, diameter 1.8 mm, working length 18 cm, with 1.3 mm opening for guide wire
2. **Guide Wire**, blunt, diameter 1.1 mm, working length 31 cm
3. **Dilation Sleeve**, with two ports, outer diameter 6.5 mm, inner diameter 1.4 mm, length 22 cm, color code: red
4. **COTTLE Metal Mallet**, with plastic replacement head, length 22.5 cm
5. **Fixation Handle**, for adjustment of dilation sleeves with outer diameter 2.5-6.5 mm
6. **Operating Sheath**, graduated, distal straight, with clamp mechanism for fixation, integrated irrigation connector, inner diameter 7.2 mm, outer diameter 7.9 mm, length 7 cm, for use with HOPKINS® Telescope 25° 28163 BFA, color code: red
7. **Operating Sheath**, graduated, with distal beak, with clamp mechanism for fixation, integrated irrigation connector, inner diameter 7.2 mm, outer diameter 7.9 mm, length 8 cm, for use with HOPKINS® Telescope 25° 28163 BFA, color code: red
8. **Operating Sheath**, graduated, distal oblique, with clamp mechanism for fixation, integrated irrigation connector, inner diameter 7.2 mm, outer diameter 7.9 mm, length 17 cm, for use with HOPKINS® Telescope 25° 28163 BFA, color code: red
9. **HOPKINS® Wide Angle 25°**, angled eyepiece, outer diameter 6.6 mm, working channel diameter 3.6 mm, length 18 cm, autoclavable, fiber optic light transmission incorporated, color code: red
10. **Fiber Optic Light Cable**, with straight connector, diameter 3.5 mm, length 230 cm (not illustrated)
11. **Bipolar Electrode**, angled, diameter 2.5 mm, working length 36 cm
12. **Knife**, retractable, diameter 3.5 mm, working length 36 cm
13. **CLICKLINE Palpation Hook**, with distal ball, bendable to 90°, size 3.5 mm, length 36 cm
14. **Palpation Hook**, distally angled 45°, diameter 2 mm, working length 34 cm
15. **Dissector**, distally curved 45°, diameter 2.6 mm, working length 36 cm
16. **Dissector**, distally curved 90°, diameter 2.6 mm, working length 36 cm
17. **Grasping Forceps**, double action jaws, diameter 2.7 mm, working length 36 cm
18. **Grasping Forceps**, single action jaws, with 90° angle of view, diameter 3.5 mm, working length 36 cm
19. **CLICKLINE Raven’s Beak Forceps**, rotating, single action jaws, diameter 3.5 mm, length 36 cm
20. **CLICKLINE BLAKESLEY Grasping Forceps**, rotating, single action jaws, fenestrated, size 3 mm, length 36 cm
21. **SPINOFIT Punch**, dismantling, 45° downbiting, not through-cutting, working length 30 cm
22. **SPINOFIT Punch**, dismantling, 90° downbiting, not through-cutting, working length 30 cm
23. **Trephine**, with round handle, inner diameter 3.2 mm, outer diameter 4.2 mm, working length 22 cm
24. **Trephine**, with round handle, inner diameter 7 mm, outer diameter 8 mm, working length 17.5 cm
25. **Trephine**, with pyramidal handle, inner diameter 1.6 mm, outer diameter 2.7 mm, working length 30 cm

**Recommended Containers for Sterilization:**
- Telescopes: 39314 G
- Instruments: 39360 BK
Basic Set
Posterolateral Approach
1. **28163 PL** Puncture Needle, including stylet, diameter 1.8 mm, working length 18 cm, with 1.3 mm opening for guide wire
2. **28163 GWT** Guide Wire, blunt on both sides, diameter 0.7 mm, working length 41 cm, package of 5
3. **28163 FHP** Dilation Sleeve, outer diameter 6 mm, inner diameter 1 mm, length 22 cm, with two ports, for the posterolateral approach, color code: green
4. **28163 CM** COTTHE Metal Mallet, with plastic replacement head, length 22.5 cm
5. **28163 FEH** Punch Sleeve, for use with operating sheaths
6. **28163 FKD** Fixation Handle, for adjustment of dilation sleeves with outer diameter 2.5-6.5 mm
7. **28163 PSG** Operating Sheath, graduated, distal straight, integrated irrigation connector, inner diameter 6.2 mm, outer diameter 6.9 mm, length 17 cm, for use with HOPKINS® Telescope 15° 28163 FFA, color code: green
8. **28163 PSN** Operating Sheath, graduated, with distal beak, integrated irrigation connector, inner diameter 6.2 mm, outer diameter 6.9 mm, length 17 cm, for use with HOPKINS® Telescope 15° 28163 FFA, color code: green
9. **28163 PSW** Operating Sheath, graduated, distal oblique, integrated irrigation connector, inner diameter 6.2 mm, outer diameter 6.9 mm, length 17 cm, for use with HOPKINS® Telescope 15° 28163 FFA, color code: green
10. **28163 FFA** HOPKINS® 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
11. **495 NA** Fiber Optic Light Cable, with straight connector, diameter 3.5 mm, length 230 cm (not illustrated)
12. **28163 FBC** Bipolar Electrode, angled, diameter 2.5 mm, working length 36 cm
13. **28163 UH** Palpation Hook, distally angled 45°, diameter 2 mm, working length 34 cm
14. **28163 FDW** Dissector, distally curved 45°, diameter 2.6 mm, working length 36 cm
15. **28163 FDG** Dissector, distally curved 90°, diameter 2.6 mm, working length 36 cm
16. **28163 SE** TAKE-APART® BLAKESLEY Forceps, diameter 2.3 mm, working length 30 cm
17. **28163 SL** TAKE-APART® Grasping Forceps, serrated, diameter 2.3 mm, working length 30 cm
18. **28163 FBM** Grasping Forceps, double action jaws, diameter 2.7 mm, working length 36 cm
19. **28163 FBG** CLICKLINE Palpation Hook, rotating, with distal ball, bendable to 90°, diameter 2.7 mm, length 36 cm (not illustrated)
20. **28163 FTK** Trephine, with round handle, inner diameter 3.2 mm, outer diameter 4.2 mm, working length 22 cm
21. **28163 FTG** Trephine, with round handle, inner diameter 7 mm, outer diameter 8 mm, working length 17.5 cm
22. **28163 FTM** Trephine, with pyramidal handle, inner diameter 1.6 mm, outer diameter 2.7 mm, working length 30 cm

**Recommended Containers for Sterilization:**
Telescopes: 39314 G
Instruments: 39360 BK

Bipolar electrode insert is available separately under order no. 28163 FBE.
**ARTHROPUMP® Power**

The perfect synergy between the ARTHROPUMP® Power and the SpineTIP system provides the continuous flow required to perform successful surgery.

**283407 02-1** ARTHROPUMP® Power, Set, Spine, power supply 100-240 VAC, 50/60 Hz, including:
- **Mains Cord**, length 300 cm
- **Tubing Set Irrigation**, for ARTHROPUMP® Power
- **Tubing Set Suction**, for ARTHROPUMP® Power
- **SCB Connecting Cable**, length 100 cm

**Specifications** (application for the spine):

<table>
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<tr>
<th>Specification</th>
<th>Value</th>
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<tbody>
<tr>
<td>Pressure, regulated</td>
<td>20-150 mmHg</td>
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<tr>
<td>Continuous Flow</td>
<td>10-200 ml/min</td>
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<td>Power supply</td>
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<td>Dimensions</td>
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<td>Certified to</td>
<td>IEC 601-1, CE acc. to MDD</td>
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